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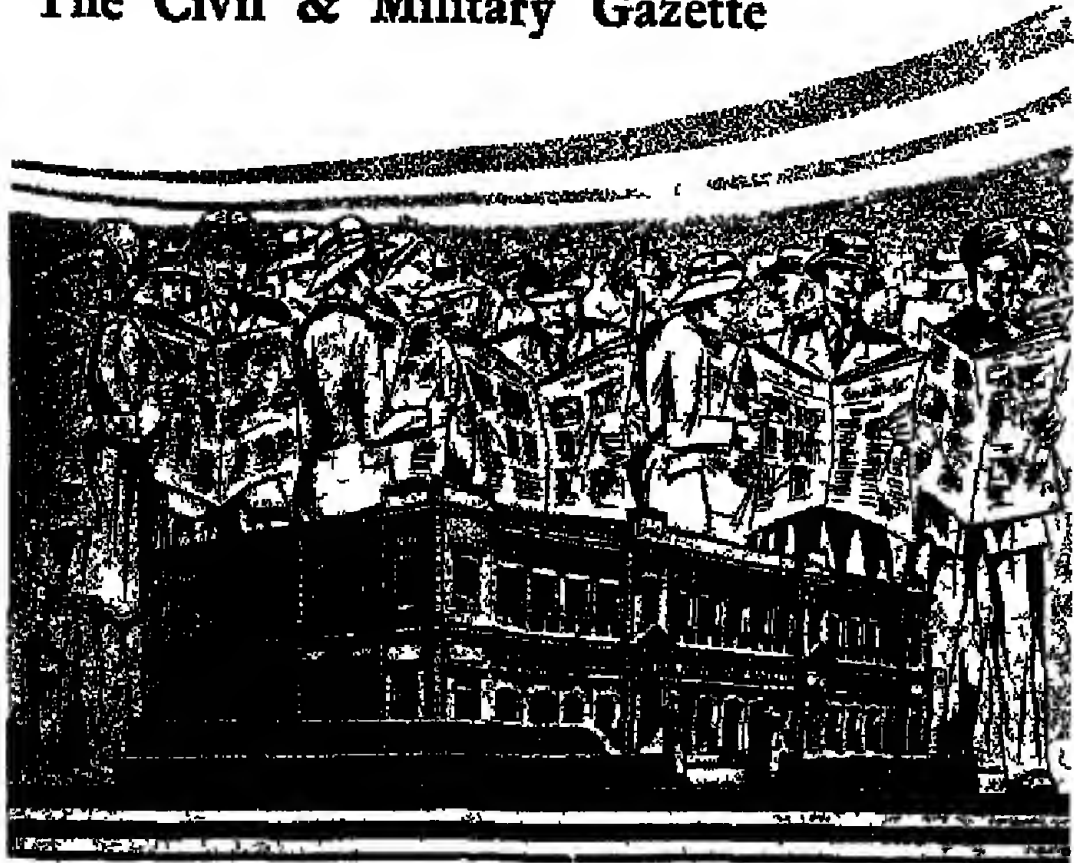
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THE ASIATIC REVIEW

OCTOBER 1938

PROCEEDINGS OF THE EAST INDIA ASSOCIATION

TUBERCULOSIS IN INDIA A KEY PROBLEM

BY MAJOR-GENERAL SIR JOHN MEGAW,
K.C.I.E., M.B., I.M.S. (RETD.)

You cannot have come here this afternoon with the hope of hearing a cheerful lecture. But even the dark cloud of tuberculosis has its silver lining. A century ago in England 4,500 persons in every million died every year of tuberculosis; the number has now fallen to 650 per million, or about one-seventh of what it used to be.

Tuberculosis is a disease, or rather a group of diseases, all of which have one thing in common: they are caused by a special kind of microbe discovered by Robert Koch in 1882 and called the bacillus of tuberculosis.

Tuberculosis is a cosmopolitan disease; it attacks people all over the world, except for a few isolated places which have remained free from contact with modern civilized conditions. The bacillus can attack any part of the body, but far more deaths are due to tuberculosis of the lungs than to all the other forms of the disease put together. In the great majority of cases the bacillus finds its way into the body by being inhaled into the air passages or by being swallowed with food or drink.

The general public have been thoroughly enlightened in the danger of spread of the infection by spitting: the penalties prescribed for indulgence in this filthy habit are widely advertised and too seldom imposed. But there is another habit which unfortunately does not cause the same feelings of disgust, although it is really far more dangerous—the habit of coughing in rooms

or any kind of enclosed spaces which are occupied by other people

When a person who has open tuberculosis of the lungs coughs he sends out a regular *spray of droplets into the air* these droplets consist of sputum, and most of them are so small that they remain suspended in the air in much the same way as a puff of tobacco smoke. As each droplet may contain a large number of the bacilli you can realize how dangerous it is to breathe the air in the vicinity of an infected person. The inhalation of disease microbes in this way is called 'droplet infection,' or more realistically 'sputum spray infection.' In the open air or even in the air of a well-ventilated room these droplets are so quickly carried away by air currents that there is little risk of infection except by inhaling the air within the actual zone of bombardment by the spray.

A KEY DISEASE

Many other dangerous diseases are conveyed from man to man by droplet infection—for example, influenza, which in 1918-1919 destroyed nearly ten million people in India, in fact, more people died within a few months from influenza than were killed by plague during the preceding twenty years. Pneumonia, bronchitis and diphtheria are examples of the diseases which are conveyed in this way.

The precautions which are effective in preventing the spread of tuberculosis by droplet infection will be equally successful in controlling a large number of deadly maladies, so that in this respect tuberculosis is a key disease.

The other chief method by which the bacillus enters the body is by swallowing infected food and drink. In this country a certain number of cases of tuberculosis are caused by drinking raw milk from tuberculous cattle, but in India people seldom drink unboiled milk, and, besides, very few cattle are tuberculous, so that this source of infection is negligible. Unfortunately the bacilli of human origin have many opportunities for getting into the food and drink in India, so that alimentary infection can by no means be ignored. Other microbic diseases communicated by alimentary infection are cholera, dysentery and typhoid fever, so

that measures directed against this method of conveyance of tuberculosis will prove equally effective in controlling these maladies. Here then is another way in which tuberculosis is a key disease. In fact, apart from the group of diseases carried by insects every one of the great killing maladies of India will be completely controlled by the measures which are appropriate for the control of tuberculous infection.

THE SEED AND THE SOIL

Although tuberculosis is always caused by a special bacillus, and cannot exist in the absence of this microbe, it would be utterly misleading to confine our attention to the bacillus. The bacillus is the seed of the disease, but from the practical point of view the soil on which the seed falls is equally important. The soil is the human body, and there is abundant evidence that unless a heavy dose of infection enters a healthy and well nourished body the seed will not produce a deadly crop of disease. The great majority of the people in this hall have been infected with tuberculosis at some time or other. What happens is that when the bacilli enter our bodies they begin to multiply, but, if we are well nourished, our defensive mechanism is stirred to activity and wages successful war against the bacilli. It is only when the dose of infection is excessive or when our powers of resistance are feeble that the microbe gains the upper hand. There is reason to believe that when we have overcome an invasion by the bacilli of the disease our powers of resistance against further attacks are increased so that these inapparent forms of tuberculosis are often blessings in disguise. There is ample proof that these mild attacks of disease are of common occurrence. Careful examination of the bodies of adults who have died from accidents reveals the presence of the scars of the disease in the majority of cases. Even during life it is possible to obtain clear evidence of the previous existence of tuberculosis in many persons who have never shown signs of the disease.

In the course of the defensive reaction against the bacilli certain substances are produced in the body and these persist for years. Their presence can be detected quite easily by the tuberculin re-

action which is positive in the majority of adults in many places. Even when the bacilli have gained the mastery to such an extent as to cause obvious signs of disease, it is usually possible to reinforce the defences of the body so as to bring about a cure. Hence the importance of early diagnosis. The true picture of tuberculosis is far different from that of the popular imagination.

The important point about the inapparent attacks of tuberculosis is that they indicate the impossibility of escaping from infection in existing conditions and the great importance of attention to the soil as well as the seed. The ideal is to eliminate the seed, but this is not practicable in the immediate future, we can, however, take comfort from the knowledge that even with partial control of infection there can still be a great degree of success in controlling the disease. For many years it has been a matter of common knowledge that persons who are well nourished and who lead healthy outdoor lives rarely suffer from tuberculosis, but the clearest demonstration of the importance of nutrition was given during and after the Great War. During that period the death-rate from tuberculosis rose sharply in every country in which there was a great shortage of food, and the rise was directly proportional to the degree of shortage. Recent work on nutrition has shown that not only tuberculosis but also many other diseases are greatly influenced by the state of nutrition of the body. Here again tuberculosis is a key disease.

INHERITED TUBERCULOSIS

The pessimistic outlook on tuberculosis has been greatly fostered by the belief that the disease is hereditary. Strictly speaking there is no such thing as inherited tuberculosis; the disease is always acquired. Although infection may enter the body before birth such an occurrence is so rare as to be negligible, and for practical purposes we may regard the newborn babe as entering the world with a clean bill of health even when both parents are suffering from tuberculosis. The only part played by heredity is that some people inherit a constitution which offers a low degree of resistance to infection, but all the evidence goes to show that nobody need be doomed to tuberculosis if the nutritional condition of the

body is maintained and heavy doses of infection are avoided. For concrete evidence that tuberculosis is easily controllable we can look at what has been happening in England. In the past twenty years the death rate from the disease has fallen by nearly 50 per cent. During the same period the expenditure from public funds on anti tuberculosis measures has risen enormously.

If one were to claim that the fall in the death-rate was due to the rise in expenditure you might be prepared to agree. But if public health partisans were to tempt anyone to make such a claim, his public-health conscience ought to step in and insist that the whole truth should be told. The truth is that the death-rate was falling just as rapidly during the pre war years when little public money was being spent on special anti tuberculosis schemes.

Tuberculosis experts are the first to admit frankly that the chief cause of the rapid decline of tuberculosis is improvement in the conditions of life of the people. By better housing and better hygienic conditions in general the spread of infection has been greatly diminished, by better food the soil has been rendered less suitable for the development of the seeds of the disease.

Now let us come to grips with the critics of our modern anti tuberculosis measures. They argue that *modern treatment* prolongs the lives of the patients and so enables them to continue to spread infection and also to bring into the world more children with an inherited predisposition to the disease. We do not hear such arguments from persons who are suffering from tuberculosis or from persons whose relatives and friends are victims of the disease. If the problem were purely biological, and if the sole consideration were to stamp out the disease in the shortest possible time, the best policy would be to consign every infected person to the lethal chamber. Such is the logical conclusion of the argument that humanitarian measures are a waste of money. On the other hand we can claim that the combination of humanitarian relief measures with scientific prevention is yielding the happiest results. The important matter is that victory over tuberculosis in this country is in sight, and if the present rate of progress is maintained there are people alive today who will be able to tell their children how the scourge of tuberculosis darkened the lives

A few years ago I attempted to make a rough-and-ready survey of the number of cases of tuberculosis and other diseases in the rural areas of India. The method adopted was to issue a questionnaire to a large number of doctors in charge of dispensaries in typical agricultural villages throughout India. The doctors were asked to state how many persons were suffering from tuberculosis in their own village. An estimate based on their replies suggested that there were $1\frac{1}{2}$ to 2 millions of cases in India. Not even a moderate degree of accuracy is claimed for this estimate, nothing short of a careful personal survey by trained men will give a convincing reply to the question—how many people are suffering from tuberculosis in India?

I have also tried to obtain some evidence on the subject by examining the statistics published every year in the Public Health Commissioner's Report on the health of the prisoners and troops in India. From these it appears that admission-rate for tuberculosis of the lung in prisons was 5.5 *per mille* in 1895, that it rose rapidly during the next ten years to the high figure of over 9 *per mille*, and thereafter declined steadily to 5 *per mille* by 1935, or somewhat less than the figure of forty years previously.

We cannot derive much comfort from these figures, for the reports of the earlier years state that most of the cases resulted from infection contracted in the jails, and recognition of this fact was followed by the introduction of special measures for the isolation and treatment of tuberculous prisoners. These reforms must have caused the great fall which is shown in the admission-rate during the latter part of the forty years' period with which we are dealing. The slight reduction in the admission-rate—namely, from $5\frac{1}{2}$ to 5 *per mille*—during the whole period of forty years is not encouraging, seeing that during the same period the general health of the prisoners improved in a striking manner, as is shown by the fall in the total death-rate from 27.6 to 11 *per mille*. If the present admission-rate for tuberculosis of the lung in Indian prisoners be regarded as a fair index of what is happening in the country as a whole, it would appear that close on 2,000,000 of the people of India and Burma are suffering from tuberculosis of the lungs. This figure corre-

sponds closely with the estimate arrived at in the village survey, but here again it is unsafe to pin great confidence on the figures

During the same period of forty years the number of cases of tuberculosis of the lung in Indian soldiers fell from 2.3 *per mille* to 1.9, but this small reduction contrasts sharply with a fall in the death-rate from all diseases in Indian troops from 11.6 to 2.15. Another significant fact is that the cases of tuberculosis of the lung in British soldiers in India fell during the same period from 4.8 *per mille* to 1 *per mille*, although the present death-rate in British troops from all diseases is appreciably higher than that of the Indian troops. This reduction in the tuberculosis rate among British troops is what would be expected from the combination of two factors—one being the improved hygienic conditions in which the soldiers are living, and the other the fall in the tuberculosis rate of the population from which the soldiers are recruited.

In the case of the prisoners and Indian troops similar improvements in hygienic conditions have brought about very satisfactory results in the case of all other diseases, but have had little effect on tuberculosis. The suggestion, therefore, is that the incidence of tuberculosis in the places from which the prisoners and soldiers come must be rising.

The number of patients under treatment for tuberculosis in the hospitals in India has greatly increased during the past few years, but here again we cannot be sure that the figures give a true index of the prevalence of the disease. Making the fullest allowances for the fallacies which are inherent in the preceding estimates, all the evidence points so strongly to a serious increase in the disease that an accurate survey of the situation is urgently needed.

THE NEED FOR SURVEYS

The medical research workers of India at a recent conference expressed their regret that so little work had been done in India on tuberculosis research, and recommended that provincial authorities be urged to carry out accurate tuberculosis surveys in their areas. If we are to conduct a successful campaign we must at the outset find out the numbers and disposition of the opposing

forces. Does this mean that we ought to do nothing till we have completed the survey? Emphatically no! Even though our knowledge of the situation in India is admittedly imperfect, it is quite enough to show not only the crying need for immediate action but also the lines on which action should be taken. India is fortunate in having at her disposal the accumulated experience of other countries in which the tuberculosis problem has already been closely studied with the result that it is being successfully solved.

Anti-tuberculosis measures are of two main types, preventive and remedial. Preventive measures must deal with both the seed and the soil, they must aim at controlling the spread of infection and at raising the bodily resistance of the community. The ideal means of preventing the spread of infection would be to isolate under proper control everyone who is infectious. This measure would involve the construction of sanatoria, with accommodation for at least two million patients and the maintenance of a large and costly army of skilled doctors and attendants. Even the most prosperous Western countries are far from having attained the ideal of providing one bed for every person suffering from infectious tuberculosis, so that any suggestion of this kind must be ruled out as being utterly impracticable in India.

There is no need to be unduly discouraged because of the obvious impossibility of doing for the people all that is necessary. In the case of tuberculosis and all other public health problems a far better way is to teach and persuade the people to do things for themselves. We have seen that the control of tuberculosis in England has been brought about, not by the Government, but by the people. Things done for the people must necessarily be expensive and of temporary benefit, whereas things done by the people themselves are both economical and durable. The spread of infection in India can only be prevented by a process of educative persuasion. The people must be taught how droplet and alimentary infections are conveyed and how they can be avoided. To carry out the educative campaign we have at our disposal the schools, the printing press, public lectures, the cinema and above all wireless broadcasting. In connection with propaganda a word

of warning must be said against laying undue emphasis on the horrific aspects of the disease. The fear of tuberculosis already exists, in some places it amounts to a state of unwarranted panic. It is a case of a little learning being a dangerous thing. Stress must always be laid on the maintenance of health and the means of avoiding infection rather than on the horrors of disease.

There is much to be said for directing propaganda against all infectious diseases of the respiratory and alimentary systems rather than against tuberculosis alone. If it came to be understood that everyone who has a cough ought to be kept in the open air or isolated in a well-ventilated room tuberculosis would lose much of its power to terrorize and demoralize its victims. Fatal delay in seeking treatment is often due to the dread of hearing the diagnosis, which is regarded by many people as a sentence of death. Suitable accommodation in a verandah or open "lean-to" can be provided for the patient at a trifling cost, at any rate in rural areas. A member of the patient's family can be trained to look after him. From ten to twenty persons can be treated in their own homes for the cost of a single patient in a modern sanatorium. A useful piece of research would consist in devising models of suitable shelters made of materials available in the various localities.

Preventive measures which aim at building up bodily resistance against the bacillus are essential parts of the programme, these constitute a complex problem in themselves. The Governments of India would find it just as impossible to provide proper food and housing for everyone as to build and maintain modern sanatoria for all the patients who need treatment. Here again they must fall back on the plan of persuading the people to do things for themselves.

EDUCATION IN LIFE PLANNING

The key unit in every State is the family, and the only prosperous States are those in which each family lives a well-planned life. The heads of every family must, therefore, be taught how to plan a satisfactory existence for those who are dependent on them. Here is where the responsibility of Governments comes in, it is their duty to provide sound education in life planning and to

persuade the people to adopt the plans which have been prepared. The most difficult part of the task is to bring about the change in the outlook of the people without which better conditions of life are unattainable. Inefficient methods of agriculture, wasteful customs, early and improvident marriages, are some of the chief handicaps which the people of India have imposed on themselves. Unless these can be thrown off, Nature will continue to maintain the balance between population and food supply by tuberculosis and other cruel methods. In fact, all the world over people must choose between planning their lives as they would have them to be and having them planned by the blind and brutal forces of Nature. Can the outlook on life of 350 millions of people be changed? A few years ago such a question would have been received with derision, but after the recent demonstrations given by Russia, Germany, and Italy everyone must admit that incredible changes in the mentality of great nations can be wrought by persistent propaganda.

Far be it from me to suggest that we ought to copy any of the political systems of these countries, but we might well adopt their methods of mass suggestion in the good cause of promoting the welfare of the people. In doing this we need not interfere with religion or curtail liberty in the slightest degree. There is good reason for believing that if one quarter of the money which is now spent on education in India were allotted to a scheme of instruction in life planning, the problem of tuberculosis and most of the other great problems could be solved.

The first essential is to have a sound plan, and the preparation of such a plan demands the co-operation of men with practical knowledge of agriculture, industry, economics, hygiene, education, and, above all, of men with a sympathetic understanding of the psychology of the Indian peasant. Technical advisers are needed, but the knowledge of the various kinds of experts must be co-ordinated and translated into simple language which will bring home to the people the causes of the ills from which they suffer and the means by which these can be cured. This sounds quite simple, but in reality the scheme will call for a lot of hard thinking by the best brains of India, helped by the best brains of the

countries which have already solved most of the problems which India has to face. When once a plan has been prepared the rest will be easy, it will only be necessary to carry out a system of mass propaganda on the lines that have always proved successful.

There are encouraging signs that those who are responsible for the welfare of India realise the nature and gravity of the problem and the responsibility of Government for initiating action. Let me first quote the following statement from the Report of the Royal Commission on Agriculture in India. This may fairly be assumed to have emanated from Lord Linlithgow.

"The demand for a better life can in our opinion be stimulated only by deliberate and concerted action to improve the condition of the countryside, and we have no hesitation in affirming that the responsibility for initiating the steps necessary to effect this improvement rests with Government."

Everyone will agree that His Excellency is doing everything in his power to discharge a responsibility which ten years ago he little dreamt he was imposing on himself.

Again, we have the statement by the President of the party which has become responsible for the welfare of more than half of the people of British India, that he is greatly concerned at the economic and population situation, and that something will have to be done. It now only remains for public opinion to demand the action which Government will be only too glad to initiate.

MEDICAL RELIEF

The campaign against tuberculosis must include humanitarian effort for the relief of the sick.

Prevention and cure are going hand-in-hand in England with the happiest results, in India there are very special reasons for supplying medical aid to the victims of the disease; the chief of these is that before any preventive action can have a hope of success the goodwill of the people must always be enlisted by the cure of disease. Apart from this, sanatoria and dispensaries have great educational value and serve as centres for propaganda work.

There is little need to stress the importance of medical relief in dealing with tuberculosis, the public will insist on having treat-

ment, and it is the business of Governments to see that they get it. I have tried to show you that tuberculosis is a key problem of India and that its solution will mean far more than the conquest of one terrible disease. Even this brief and sketchy survey of tuberculosis in India would be incomplete without reference to the work of the King George Thanksgiving (Anti-Tuberculosis) Fund.

When the Viceroy, then Lord Irwin, was considering the best way of giving tangible expression to the joy of the people at the King's recovery from his dangerous illness, I had an opportunity of suggesting that tuberculosis was a key disease in India, and that a fund for anti-tuberculosis work would be the most suitable manner of commemorating the occasion. Possibly others made the same suggestion, but in any case it was adopted with the approval of His Majesty. The Fund has an income of about £4,000 a year, and with this small sum it has been possible to encourage the formation of a number of local committees to carry out extensive propaganda work, provide for special training of doctors, nurses and others in tuberculosis and give advice to those who are engaged in anti-tuberculosis work.

There need be no fear lest Lady Linlithgow's Fund should lead to a duplication of effort. The field is so vast that £4,000 a year is quite inadequate for its proper cultivation, and the success which has already been achieved by the Thanksgiving Fund with its limited resources shows what could be done if enough money were available.

Let me close by appealing to you for your sympathy and help in the splendid effort which is being made by the Chairman of this meeting, Lady Linlithgow. Her chief aim is doubtless the relief of suffering, but the work cannot fail to give a great stimulus to the campaign for the eradication of the disease.

DISCUSSION ON THE FOREGOING PAPER

A JOINT meeting of the Association and the Overseas League was held at Overseas House, St. James's, S W 1, on Tuesday, June 21, 1938, when a paper was read by Major-General Sir John Megaw, K C I E, M. B., I M. S. (retd), on "Tuberculosis in India A Key Problem" Her Excellency the Marchioness of Lanthigow, C. I., was in the Chair

Lady LINTHOGH said My chief duty today is to introduce to you Sir John Megaw, whose name means a great deal to you, as it does to the rest of us, for his many years of work in India.

I may say that I did not intend to take part in any meetings while I was home for a holiday, but I felt that I would like to be with you all today and to have the advantage of hearing Sir John Megaw When one has set one's heart on completing an undertaking, one feels that everything else must be subservient to it, and I certainly have never set my hand to a task with more determination to bring it to a successful conclusion than this task of fighting tuberculosis in India. (Applause)

But, ladies and gentlemen, I cannot do it alone, and I want all the help that you can give me here, and all the help I can get from those in India I can, I think, confidently claim that interest in India has been aroused in all classes of the community Before I left I had very interesting talks with prominent members of all parties. I think I have persuaded them all that tuberculosis, and indeed public health generally, is a question on which we can all work side by side for the public good.

I do not propose to say any more at this stage, having regard for Sir John Megaw's feelings I would not presume to put myself on the same footing as Sir John in the matter of knowledge of this subject, or of knowledge of India and its conditions, but I think I can put myself on a level with him in my love for the country and in my wish to do all that is possible during my sojourn there (Applause)

(Major-General Sir JOHN MEGAW then read his paper on "Tuberculosis in India A Key Problem.")

The CHAIRMAN I am sure you will all agree with me that we have gained much from Sir John Megaw's paper, and I personally have listened with great attention and interest.

You may like to hear briefly of my plans for the campaign after the fund is closed, and although these are necessarily not yet entirely determined on, as this will only be done by a meeting of the full Committee when formed, I would like to take this opportunity of saying that the existing Committee of the King George V Fund will naturally be a large part of the Committee In saying this, I mean that the present Committee will be added to and strengthened, but it is my earnest hope—and I do not think there is any doubt of this—that the present members will continue to serve

As you are probably aware, 95 per cent. of the money collected in each

Province goes back to that Province. It is a larger percentage than has ever been given before, the reason being that we realize that for the work to be of any real value, it must be carried on according to the needs of that particular Province.

We are drawing up a plan of campaign for co-ordination of the Provinces and adapted to their own needs. We are keeping 5 per cent. only at the Centre, and we have many plans for the using of this money. Among them are the payment for the services of an expert. By an expert I mean not only an expert in the disease of tuberculosis, but in every branch of tuberculosis, and who is cognisant with every method that can be brought into use. He would be there to give advice and assistance when wanted by the different Provincial and State organizations. We also hope to have a model clinic, and to enlarge the scope of the existing buildings dealing with tuberculosis. It will naturally depend on the amount of money available as to what we are able to carry out.

Many people have told me that it is of no use carrying out schemes for the prevention and the cure of tuberculosis until the nutrition, the housing and the many other social problems of India have been tackled and improved.

I agree only to this extent that the other social problems which exist should be tackled at the same time and should go hand in hand with the measures which are adopted to fight tuberculosis. (Applause.) I have every reason to believe that all public bodies connected with health or housing will approve of this scheme—in fact, a great many have already said so—but I do not see any reason why we should not help the one who is suffering from tuberculosis and do our utmost to prevent it in the future.

I would like to stress the preventive side of the campaign, as I feel sure that therein lies the whole problem. As Sir John Megaw has told you, the statistics are very unreliable, but those given to me after investigation by the Bengal Tuberculosis Association were so appalling that I feel they are worth mentioning although they say they cannot give these figures with any accuracy, they estimate the deaths in Bengal alone to be in the neighbourhood of 100,000 yearly.

One aspect that I am most anxious to impress upon the general public in India is that, if taken in the early stages, tuberculosis is curable. I have asked all those who are carrying out propaganda in the country to make a special point of this. By this means I hope that gradually concealment will cease to be resorted to.

I would like to allude to one or two sentences in Sir John's lecture which are of tremendous interest, one of them being the inherited predisposition of children to the disease. I would like to say at this moment that I think it will be of interest to the company to know that in the twenty-three years of the existence of the Papworth Village Settlement, near Cambridge, there has not been a single case of a tubercular child from tubercular parents. I know that Papworth, as it stands, would not be suitable for India, yet I do think it points to the fact of the necessity of an after-care scheme, as we see that with proper environment and supervision of the parents it is not necessary that the children should contract the disease.

I do not want to take up your time, as there are others who wish to say a

few words, but you may like to know that up to now the amount collected is over Rs 41 lakhs, and as we have still some time to go I hope we may be, anyhow, within reasonable reach of my objective.

I addressed a large out-of-door meeting of women just before I left Delhi, at the request of the wife of a prominent Congress member. I addressed this meeting in the public gardens, and I am glad to say the women who attended seemed to be very enthusiastic.

I took my courage in both hands, and I told them that the time was past for women in India to sit back and say, "Government must do this. Government must do that." They had now come to the stage when they must do things for themselves and show their fellow-countrymen and fellow-countrywomen that Indian women are as capable of doing social service as any other women in the world. (Applause.)

An encouraging aspect of this is that many school teachers in the colleges and schools that I visit have told me that, for the first time within their experience, girls are discussing among themselves the possibilities of taking up social service. Although one knows that it must take some time to bring this plan to fruition, yet I think that they are all imbued with the right spirit, and that they only require encouragement to do their utmost. (Applause.)

LORD GOSCHEN I am not going to make a speech because unfortunately I have to leave in a moment for another meeting in this building. But there is just one word I wanted to say today. Very naturally, as one who has had the privilege of working for some time in India, I have listened with the deepest interest to the speeches which have been made by Lady Linlithgow and by Sir John Megaw, because I know well the ravages which this disease has caused and is causing in India, and I am as anxious as anybody to assist in any measures which may ameliorate it.

I am sure today we realize the immense sympathy which Lady Linlithgow has in all the measures which will either prevent, or assist in curing, this disease. Her mere presence here today when she is on a holiday from a most strenuous life, as we all know, shows her deep interest in the matter. (Applause.)

But what I really rose to say was to assure you, as Chairman of the Overseas League, how very glad we are as a League to have been able to have this meeting here on our premises. We shall only be too glad to assist in any way we can to spread any propaganda that it is possible for us to do. I hope that we may be able perhaps to be of some use through our magazine, which we send out to so many thousand members, and I am sure our Indian group will be interested to hear of the lecture which has been given here today.

I feel very hopeful that with our great interest in the Empire and all that concerns the Empire, we may be able to do something to further the schemes for the benefit of India—schemes which the Viceroy and Lady Linlithgow have so tremendously at heart. (Applause.)

Major-General E. W. C. BRADFIELD (Director-General, I.M.S.) I did not expect to speak, but I am very glad to say what I can about what is being done and what we are trying to do in India at the present moment.

Sir John has told us very fully what the tuberculosis problem is, and he has also told us that it is a key problem. Our difficulties in India, as in other countries in the East, are really enormous—colossal. Not only do we have to deal with people, especially the tuberculosis patients, who are often more attracted by a cheap charm bought in the bazaar than by Western medicine, but the financial problem is an enormous one.

If you consider that there are from two to five million people in India who are suffering from tuberculosis, you can realize that even the sum of £500,000—which we hope to reach—cannot possibly go very far. Again, the average income of an Indian is, I believe, only about Rs. 120 a year, and far less in the villages, as against ten times that amount in this country and twenty times that amount in the United States. Then again, we also have to deal with inadequate statistics, and even today inadequate medical and other staffs.

But I should like also to remind you of another thing which Sir John said, and that is, it is not a problem to be gloomy about. It is not a depressing problem if we will only look twenty years ahead. Some of us probably can look back and realize what conditions in India were thirty to thirty-five years ago. In those days Indian women would hardly go to hospital. Nowadays we cannot provide beds in hospitals fast enough for women in India. And the tuberculosis patient is, if I may say so, tuberculous-minded. He is willing to listen, anxious to listen, to propaganda. If we can devote our preventive measures to the tuberculosis family, I myself am convinced that if we devote our efforts in the main to the preventive side of this disease, we shall be successful.

This is not the time to go into the various methods by which the problem can be tackled. I only wish to add my opinion that it is not a problem which we need be at all gloomy about.

Major-General Sir CUTHBERT SPRAWSON. There is so much to be said on this matter of tuberculosis in India, and the difficulties are so many, that it is hard to convey understanding of all these matters in a brief space, but Sir John Megaw has put it all so comprehensively and so lucidly that I think everyone here now, certainly everyone who knows India, must have an understanding of at least the basic points of the situation.

There is one very instructive thing Sir John said. He said that the Indian situation can only be understood in the light of experience gained in other countries. That is very true. Consider our own country of England. As Sir John pointed out, 150 years ago and less the mortality from tuberculosis in England was appalling. It is only during the last 80 years that the mortality has fallen gradually to reach its present level. Admittedly the statistics of 150 years ago were not accurate, but still we have some reason to believe that before that time the disease was not so excessively rife.

What was it then in England that made it so rife about 150 years ago? When we come to look as to what was happening in England about that time, we find that there was a gradual increase in the industrialization of the country, which hitherto had been almost entirely agricultural, and that the country folk were flocking more to the towns, to towns and cities that

were ill-prepared to receive them, with the result that there was not only overcrowding, but doubtless they did not get so well fed when they got to these overcrowded towns as when they were in their country homes

The history of other countries shows similar occurrences, and when we see what is happening in India today, we find practically the same story. We find during the last forty years at any rate there has been an increasing industrialization in India, and especially with improved means of communication that the country people flock more to the towns, to towns ill-prepared to receive them. There is overcrowding and worse feeding in the towns. Many get infected in the towns, and carry the disease back to their villages. That has been going on for the last forty years certainly.

Sir John Megaw gave you some figures to indicate that the disease might even be now increasing in India, but, as he stated, the statistics are not very trustworthy. The Government of India, realizing that, twenty-one years ago put a special officer on to investigate that point. After long investigation and writing quite a ponderous book about it, this expert reported that tuberculosis had increased. That was twenty-one years ago. Perhaps it is still increasing. It is the general impression of many doctors practising now in India that it is still increasing, and Sir John Megaw gave some convincing figures that it still was.

As Sir John said, it is somewhat gloomy to think that this disease not only may still be increasing in fact, the state of things may perhaps get worse before it begins to get better. Tuberculosis has got a start on us, and it will take a long time and a lot of hard work before we can get it anything like under control.

One advantage about this position in India is that we have the advantage of a previous experience of those other countries, and therefore we ought to know what is going to happen and ought to be able to anticipate the enemy's movements. In fact, we who are fighting tuberculosis there are in the position of a general in the field who has secured possession of the enemy's operation orders, and we might be able to counteract them.

What was it that other countries did, what did England do, to decrease this high mortality? There again it is very difficult to assess the relative value of all the beneficial measures these other countries did carry out—such measures as the general improvement of the public health, providing good workrooms in factories, limiting hours of work of the workmen in factories, making sure that they had adequate wages when they worked so that they could secure sufficient nourishment for themselves and their families, and, lastly, seeing that they had good homes to go to, when they left the factory.

Those are only some of the things, all of which are not perfected in this country yet, because we still are trying to provide better homes for some of our poorer classes, and that process in India has only just begun. All these measures have to be applied to India. It will take a lot of money and a long time, not only a lot of time but a lot of explaining to the people.

There again I am entirely with Sir John when he says that control of tuberculosis should be brought about not by Government but by the people, and Her Excellency referred to that same point. Naturally the Government

can do a great deal, and so can Local Government bodies and many municipalities by seeing that their laws are obeyed

Sir John also said "The spread of infection in India can only be prevented by a process of educative persuasion." I would emphasize that educative persuasion. It is a thing we must aim at in every possible way, education in hygiene in the most elementary schools. That is a thing we have not yet been able to secure in India, that hygiene should be a compulsory subject in the most elementary schools, and especially in girls' schools. The importance of teaching hygiene in girls' schools was emphasized two years ago by His Excellency our present Viceroy, who, when he opened a section for nutrition in the Indian Medical Research Department, drew attention to the importance of teaching hygiene in girls' schools especially, because it is the girls who are going to grow up not only to be the mothers but to be the managers of the home, and on them will depend the carrying out of all the hygiene that is carried out in the homes

This education in hygiene and propaganda are some of the important weapons in fighting tuberculosis in India. Meetings, lectures like the present one, I consider all these measures are important in England, but still more important in India. (Applause)

DAME EDITH BROWN I am very happy that I arrived in England in time to be at this meeting, and I have been extremely interested in hearing the addresses

Tuberculosis is indeed a dark cloud over India, but I am so glad that General Bradfield and Sir John Megaw have emphasized that the light is beginning to shine. We have very great hopes from the appeal which Her Excellency has started, and the campaign which will be begun, I hope, simultaneously all over India.

For many years we have felt the great cloud which this disease brings over the towns and the villages. It is not only in the towns. Our recent investigations with tests for tuberculosis have shown that 87 per cent. from the towns give the positive reaction and 77 per cent. from the villages, so it is really largely through the villages.

Then another gleam of hope comes because some years ago tuberculosis was considered to be a hopeless disease, and in India people tried to conceal it. In fact, a few years ago, when we were asked to undertake school inspection, a case of tuberculosis was found in one of the senior classes, and immediately the school inspections of the town were stopped, because they said that if it was found that anyone had tuberculosis, it would not be easy to make the marriage arrangements for her. Now I am thankful to say that good sense and persuasion have conquered, and inspections have begun again. But it shows the attitude which used to be held towards tuberculosis. Another point of great encouragement is that with the advanced surgical treatment of artificial pneumothorax and phrenic evulsion one really can say that there is great hope of a cure.

In Ludhiana in the Punjab we have a medical school, and we have some 300 Indian women under training in the various departments—130 training

to be doctors, and the others nurses, compounders and midwives. Six years ago a tuberculosis specialist came on our staff, and this autumn we are expecting a nurse to join us who has had special training in tuberculosis. We are anxious to put all our strength into helping in this campaign.

We feel that what has already been referred to as "educative persuasiveness" is what is really required, and our aim is that every woman who goes out to work from our hospital shall do this wherever she goes. Already 1,600 have passed out through the hospital, and every year some 70 or 80 pass out, so that we ought to be able to do something. Wherever they go, each woman becomes the centre of work among the women and children of that district.

As you will understand, in India the work done among women is almost more important than the work done among men, because however much the men of the towns and villages want to alter things, if the women object it is very difficult to bring alterations in the inside of the family, and it is on those that the good hygiene so largely depends.

We desire that every one of our women who goes out, whether as doctor, nurse, health visitor or midwife, should make it known among the women that tuberculosis is infectious, and therefore care must be taken in contact with tuberculosis patients, but that it is not hopeless, and if they will come for treatment early there is every hope of cure. Then they must emphasize the necessity of good hygiene by hygiene lectures in the schools, by contact with the people, talks in the centres and dispensaries.

Then, as other schemes for social improvement are being carried out, we trust the economic position will also improve, and it will be possible for them to have better food. That is one of the great hindrances. Still, if they have fresh air and sunlight, and if proper care is taken of those already infected, there is very great hope of improvement in India. So I am rejoicing that this work is being begun.

SIR LEONARD ROGERS. I have been interested in this subject for thirty-four years, but at this late hour I will not detain you long. It was in 1904 when for the first time I met my friend Sir John Megaw. I was sent by the Bengal Government to make enquiries in the unhealthy Dinajpur district into the causes of deaths put down to fevers. I found 90 per thousand were due to pulmonary tuberculosis, which was not then suspected.

A most extraordinary statement was made by Dr. Alexander Crombie, M.S., in 1891 at the International Congress of Medicine in Berlin. He said that tuberculosis and other lung diseases were very rare among natives of India. In the very hospital in which he had been physician, when I analyzed some 5,000 medical post-mortems, I found 17 per cent. had died of tuberculosis and 8 per cent. more had grave tubercular lesions, and this was the highest cause of death.

In 1909 I started a discussion on tuberculosis at the Asiatic Society of Bengal which lasted for three meetings. Shortly afterwards, on the death of King Edward VII., the Asiatic Society of Bengal at my suggestion recommended that we should have a sanatorium for Bengal and a School of Tropical Medicine as a memorial to King Edward. Unfortunately the

Lieutenant-Governor turned it down for another proposal, which was not popular, and the money was never found for a sanatorium.

There is one other important point I should like to refer to because it may affect the choice of sites for treating tuberculosis in India. Some twenty-five years ago Dr A. Gordon of Exeter published figures showing that Devonshire rural areas sheltered from the rainy west winds had very low tuberculosis rates, while other areas exposed to these winds had very high rates. In India I found high rates in divisions much exposed to the south-west monsoon rains.

If you place your sanatoria where they are exposed to the winds of the south-west monsoon, you are not likely to get good results. That is a practical point I would like to bring out.

MR J P BRANDER I should like to put one question to Sir John. There is one important point which I think he has not touched upon, which is very relevant. The population of India has increased by 32 millions in the last census decade, and this increase is still going on and is keeping the population poor and miserable.

Medical men are generally agreed that diseases and epidemics are the checks imposed by nature on over-population, and some medical men go so far as to think that epidemics and diseases on a large scale would really be the best thing for India for reducing this over-population and misery.

The point is this. Will the attempt to check tuberculosis not be such an interference with this natural check that it will by increasing the population increase the sum total of misery and poverty? In any case, as the attempt and the campaign are to be taken in hand and the population accordingly is bound to increase as the result, is it not necessary, or even more necessary, to have at the same time a parallel scheme which would teach the population to restrict their excessive families?

I would point out that the British Government has given, so to speak, official sanction to a policy of this kind in the case of the colony of Bermuda, where I notice that last year the Governor made a public speech as soon as he arrived there and announced that the Government would establish birth control clinics in that colony, where the population was increasing so fast as to cause a very serious economic and social problem. (Applause)

SIR JOHN MEGAW Fortunately there is nothing for me to reply to except the very important question that has been raised by the last speaker. I do not think he quite realized how dangerous it was to put that question to me. It is a subject on which I should like to spend at least one hour in order to try to convey to you the importance which I attach to it.

I am quite sure, as I have said in my paper, that so long as you have a population increasing at a more rapid rate than the increase in the means of subsistence, the inevitable result will be a decline in the economic condition of the people. But I have never regarded that state of affairs as a reason for ceasing to carry out public health reform. I have always emphasized the necessity for taking steps to deal with the population question side by side with steps for the improvement of the conditions of the people. As

Her Excellency has pointed out, we want progress on a wide front. We do not want merely to check the deaths from disease if we are going to replace those deaths from disease by deaths from starvation

That is why it is necessary for us to be so wide-awake when we are contending against the forces of Nature. If we do it in a blind way, Nature will get the better of us and will assert herself by imposing checks such as have been referred to by the speaker—famine, disease and in some cases checks imposed by man in the shape of warfare

I am very grateful to the other speakers, all of whom are very good friends of mine in India. Perhaps it is for that reason that they have dealt so kindly with me. I am grateful to them all the same, and I thank you for the manner in which you have patiently listened to my address

LORD LAMINGTON. I am sure we should not like to separate without expressing our appreciation of the fact that we have listened to a very complete address connected with the incidence of that terrible disease tuberculosis and its ravages, and how it can be combated in Europe and will be combated in India

There is one point, referred to by Lady Linlithgow, which also surely brings a ray of comfort and joy to many households, not only in India but in this country, where it is still believed that tuberculosis is hereditary. We are told today it is not so. On the other hand, we are told that the disease is spreading in India. There is need then for this great campaign which has been so wisely instituted by the Viceroy and has been carried out by Lady Linlithgow's hearty support and approval

We are grateful then to Sir John for having shown us so clearly that it is a key disease, and thereby in fighting tuberculosis you are also fighting other forms of illness in India. That is one comforting thought, and we all benefit, I think, by realizing what can be done to mitigate this tuberculosis evil

We are grateful then to Sir John for having put his knowledge before us, also to Lady Linlithgow for having sacrificed an afternoon of her well-earned holiday. The fact that she has done so is a sign of her sympathy for the work that is being carried on in India, and will be a stimulus to those who are engaged on the work in India

I beg to propose a very hearty vote of thanks to Sir John for his lecture, and also to Lady Linlithgow for having occupied the chair this afternoon

The vote of thanks was carried by acclamation, and was acknowledged by Lady Linlithgow

SOCIAL IMPLICATIONS OF ADULT EDUCATION IN INDIA

BY BANNING RICHARDSON

(General Secretary of the All-India Adult Education Conference)

BEFORE attempting anything in the nature of an analysis of the present condition of adult education in India it seems to me essential that we should clarify the meaning of this expression. From my experience with this work in India I have found that adult education means very different things to different people. Some conceive of it as merely the making of illiterate people literate. Others believe that this aspect of adult education is far less important than would be thought at first sight. I do not think that it is necessary to labour this point, or to give additional examples of differences of opinion. But what seems essential is that we should have clearly in mind the fact that adult education is necessarily a relative term. It does not signify any particular system or programme of education, but rather the recognition of the need for physical, mental and spiritual development among the peoples of the world and the desire to further such education in the best possible ways. From this it follows directly that adult education must adapt its aims and methods according to the type and social background of the people with whom it seeks to deal, thus adult education will necessarily be a very different thing in India from what it is in Europe or America. This is made clear if we refer to the Report on Indian Education issued last year by our Chairman, Mr. Wood, and Mr. Abbott. In this you will find that much emphasis is laid upon the fact that the mistake of Indian education in the past has been to neglect everything but the purely literary forms of education, with the consequence that today there are thousands of semi-educated University graduates who either have not got work, or who are not suited for any work but that of being office clerks.

To sum up, it seems sufficient to point out that the whole sphere of life must be the subject of adult education activity if it is to avoid the danger of emphasizing falsely one or another aspect of human life and thought. Society must be regarded as an integrated whole guided by certain principles and aims, and must therefore be approached with some comprehensive attitude of mind which, without laying down the law, will put forward certain aspirations and objects of achievement which it desires that society to cultivate.

PAST EFFORTS

Let us now turn to the history of adult education in India. As a result of the great success of the Adult Education Movement in *Great Britain and throughout the West*, and with the spreading of liberal ideas through the universities, it was felt many years ago by the social and political leaders of India that if the country were to develop to any great extent along the line of social and economic betterment, it was necessary to educate those members of the community who had already passed the school age and yet remained outside the pale of educated men. The fact which more than any other brought this to the attention of the rulers of the country was the appalling state of illiteracy that prevailed everywhere. Of the 350 million people in India and Burma only a few million could at that time, or can now, read and write, or offer any satisfactory substitute signifying some sort of touch with modern ideas and activities.

In order to combat this evil and the degradation of the masses consequent upon it, the Governments of some provinces, as well as many private institutions and individuals, attempted schemes for the wiping out of this particular evil. In fact, so many were the numbers of students in night-classes, or classes held at other times of the day, that they exceeded in number those who are receiving some form of adult education at the present time. This state of affairs existed about fifteen years ago and continued for some years. It is, however, generally agreed among all concerned that adult education at this time was a distinct failure.

There seem to have been two chief reasons for this failure, which, although they have cost much waste of time and money, have become very useful guides for those attempting future work in this field. The first of these is that the wishes of those to be taught were completely neglected. The ordinary peasant or artisan was not consulted about whether he was desirous of becoming literate or not, nor about the methods to be used to achieve literacy if it were desired. The result of this was that at the beginning many thousands of poor men came to see the new classes and how they were run, but after the novelty had worn off the great majority decided that there was no immediate or special reward for those who became literate, and being practical men they returned to their fields and workshops with the conviction that reading and writing were things to be used only by that small section of the population that already knew them, and were of no use at all to the ordinary citizen. If one thinks for a moment of the dreadful poverty and other physical handicaps of the Indian people, one can readily sympathize with this point of view.

Another and scarcely less important reason for the failure of these attempts was that the majority of teachers were unfitted for the work entrusted to them. In many cases they were ordinary school teachers such as those who even today receive only from seven to fifteen shillings per month for their work, with the result that only a very poor type of partially educated person enters this profession. For such men evening classes were but an additional labour with little or no extra reward. It is easy to see the results of such teaching—subterfuge and failure.

There were, however, in various parts of the country some isolated individual efforts in adult education made by Christian and other missions, as well as by certain manufacturing concerns and other small bodies, which did have some beneficial effect. However, such attempts were few and far between, and though often worthy and successful, yet they were too small and separated to have any visible effect on the problem as a whole.

AN AWAKENING INDIA

After this very brief and inadequate survey of the past let us turn to the present state of Indian Adult Education and its prospects for the future. What can be said with some certainty is that the educated people of India have suddenly awakened to the fact that most of India's enemies are at home rather than abroad. With the coming of the new Governments in the Provinces and the consequent feeling of greater self-respect and freedom, the educated men and women, specially those who are still in the Universities or who have left them since the war, are filled with the desire to tackle the chief problems of their country. And though some still believe that these will readily be dealt with once British rule is removed, yet the majority of thinking individuals have now come to realize, I think, that freedom can only come in consequence of the solution of these problems and not as a preliminary to them.

Money is a particular difficulty in any kind of social work in India because there is not the same tradition of giving to worthy enterprises by the middle and upper economic classes in India that there is in the Western world. Moreover, during the past eighty years the Government of India has carried out the great majority of social improvements in the country, so that the Indian has come to look on the Government as being responsible for even the smallest services in every part of the country. A humorous illustration of this occurred to me a year or so ago. I was doing some work in a village in Delhi Province and found that the main well of the village was in a serious state of disrepair. I spoke for some time to the head man of the village about it, and suggested that it was his responsibility to see that it was put right. However, I found that his reaction was that such matters were not for private or even community enterprise, because, as he said, "the Government built the well, and therefore it is their responsibility to keep it in condition."

Such a remark shows very vividly how lacking in any sort of local pride or energy is the ordinary Indian villager, and how falsely dependent he is on the Government. To return to my original statement, I wish to point out that because of the two

things mentioned previously, Indian Adult Education has been, and still is to a great extent, dependent on Government assistance. It is clear therefore that whatever is done by private enterprise must be done in close co-operation with the Government, and at the same time seek to arouse private enterprise. Recently the Governments of Bombay and Madras have set up Commissions for the study of adult education conditions, and the proposal of plans to meet the educational needs of the people. Other Provincial Governments are following this lead, and they are to a great extent relying on those private individuals and bodies who have been in the field for some time for the necessary information and guidance.

CO-ORDINATION

One sign of the awakening of the people to the necessity for this kind of education is the Bengal Adult Education Association, which was formed some months ago with Rabindranath Tagore as the president. There are already provincial bodies of one kind or another in some of the other provinces, but, generally speaking, it can be said that, although there is a good deal of scattered work being done throughout the country, there is a great need of co-operation and co-ordination on a provincial and national basis.

It was this need for co-ordination which led directly to the holding of the first All-India Adult Education Conference at Delhi in March of this year, under the presidentship of the Hon. Sir Shah Sulaiman, Judge of the Federal Court. This first conference was necessarily limited in its number of delegates and scope, but it has led to the formation of a provisional committee which is representative of all sections and communities in the country. Its object was to prepare the ground for future development rather than to set up a formal body at the present time. In the autumn another conference, this time for South India only, will be held in Madras, so it is clear that the impetus towards adult education is taking definite shape, and it may be assumed that the work will go forward from now on with greater or less success.

One thing that has become very clear in relation to adult educa-

tion work in India is that the problem cannot possibly be satisfactorily solved by paid workers, for this would require all the resources at present available for the ordinary running expenses of the various Governments, apart from absolute essentials. This means that the work can only be accomplished on a large scale if large numbers of voluntary workers of suitable ability are found. Two things lead one to hope that this is not an impossible state of affairs. One is that the Servants of India Society and others have already established a tradition of service to their country for the young men and women of India, and, secondly, there is the fact that there are at present thousands of graduates of the secondary schools and universities, desirous of doing something to help their country, who are at the present time unemployed or only partially employed. Already some of these have been called on to meet the need, and although they are not always ideal workers, yet there are among them many who with sufficient training can become real leaders in this movement.

SOCIAL CONDITIONS

We now come to the central theme of today's address—namely, the effect of adult education on the social conditions of the people of India. Let us for a moment glance at some of the chief problems which beset the country before we discuss the direction which adult education should take in order to help solve them. Most of you here this afternoon know a great deal about India, so it is unnecessary for me to go into any great detail about the economic and social conditions that prevail there at the present time. It has been said time and again that the primary needs of the Indian people are the simple necessities of life—food, clothing and adequate housing. In the last resort the solution of these problems depends upon a new social arrangement which will make a more equitable distribution of the resources of the country, thus allowing the ordinary man and woman to live a tolerable existence. But it is clear that although the Provincial Governments are attempting to solve these problems, and will continue to do so in the future, yet it seems equally clear that until the ordinary man and woman has some conception of the problems

themselves and of what an equitable settlement might be there is very little hope that such a settlement will be reached.

It is therefore on this level that adult education can do its greatest service by opening the eyes of the people, not only to the abuses of those in power over them, but to the much more constructive field of activity wherein they may learn better methods of ordering their social and economic life. It is in this last department that such things as improved methods of agriculture, handicrafts of all sorts, the building up of local *panshayats*, or councils representative of all the people of the community for the solution of local problems, improved methods of building houses, and so forth. In a country as poor as India it is essential that any form of mental and spiritual enlightenment must be accompanied by economic improvement. This does not, however, for a moment preclude the higher forms of education, but rather directs them into those channels where they may be of the greatest practical use to the masses.

The problem which has so long aggravated the urban populations of India and which will very likely spread to the rural populations with the coming of modern methods of transport and communication—namely, the communal problem—has recently come very much to the fore in Indian political life. It is, in fact, possibly the greatest problem that India has to face, because on its solution depends the solution of all the other problems, for unless the peoples of India work together as a united nation, it is obvious that there can be no real or permanent solution of its major problems. The leaders of India are confident that education will remove the communal problem, and with this statement we can have no quarrel, but it must be realized at the same time that the chief actors in communal disturbance are highly educated men who have in many cases been not only through the Universities of India but also those of Europe. It thus becomes apparent that education may be as much an instrument for propagating and continuing communal differences as a means of their solution. Are we to conclude, then, that adult education will accentuate this problem and not help to solve it? The answer to this is of course that if this education is in the hands of men and women

who are really inspired by the search for truth, no matter what or where it may lead them to, then it will be a means of solving this and other problems. But if it is used merely as propaganda for some particular social, economic or religious system, then it will obviously make matters worse.

The other great problem of India—namely, that of the caste system, with its virtual slavery in the form of the class known as Untouchables, or “Children of Heaven” as some now prefer to call them—is another great challenge to the people of India. Again, it can only be solved by so arousing public opinion and ridding the country of many wrong and selfish beliefs that the leaders of the people will not only talk about the abolition of Untouchability but will actually bring it about.

To many of those who know India well the solution of these and other problems seems to be a very distant affair, but if we look for a moment at the England of the early nineteenth century, with the appalling conditions that then existed among the workers, with slavery existing in the colonies and with the great mass of the British people completely illiterate, and if we look at the great change that has come about in the last hundred years and at the same time take into consideration the vast new resources that are now at our disposal for the improvement of man's well-being, we need not, I feel, despair of what may be done in India in a generation or so.

INDIA'S FUTURE

All the different sections of the people of India are today agreed that the greatest opportunity India has ever had lies before her. Likewise all are agreed that India must work out her own salvation for herself, asking for help and advice from England and wherever else she may see fit. However, there is a strong divergence of opinion when we come to the question of what kind of India the India of tomorrow is to be. There is of course the political question as to whether or not India shall be a member of the British Empire when she has freedom to choose. Secondly, there is the very burning question as to whether India is to become a modern nation with a variety of industries and perhaps some

share in industrial world trade, together with the necessary social changes which will accompany this state of affairs, or whether she is to remain a land of the simple peasant who lives much as his forefathers have lived for thousands of years. Concomitant with this problem is the question whether or not the people of the country as a whole should be brought into the stream of modern thought or should remain a simple, partially ignorant peasantry. Again, shall Indian culture mingle with Western culture or not? Are the ancient customs and traditions of the people of India in all their varying forms to be preserved intact, or are they to undergo a revolutionary change with a strong blend of modern thought? Also India must decide whether she is to govern herself on a Democratic, Communist or Fascist basis. This may sound like rather a grotesque statement, but anyone who is in close touch with present-day Indian thought knows that this decision is not a remote one, for although British rule is still partly authoritative, yet it is quite possible that either Communism or Fascism may enter the country in a disguised form which may be palatable to an unthinking populace accustomed for centuries to autocracy. These and many other questions have to be decided by the India of tomorrow, and it is in the last resort only the opinions of the ordinary citizen that will decide.

To return for a minute to the methods of improving the country, we find that there is an equally great difference of opinion about these also. I have already suggested that there are those who believe that the abolition of illiteracy is the greatest immediate necessity of the people. However, this is not by any means the only school of thought, nor is it necessarily the most important. For closely associated with the predominant political party of the present day we find the programme being proclaimed that if the majority of citizens can learn to do spinning, weaving and other similar handwork, the major economic problems of the country will be dissipated into thin air. One sign that both these opinions and others are reflectors of a helpless and largely unthinking populace is that they are proclaimed by means of slogans, constantly repeated, until they become habitual and almost instinctive.

THE INDIAN PEASANT

To anyone who sincerely and honestly thinks about these questions it is clear that there is not, nor can there be, any panacea for the many problems that confront India. What seems equally clear is that the only sound basis for the India of the future is the enlightened life and thought of the ordinary man expressed in constructive activity. I have already referred to the necessity of relieving the present miserable social and economic position of the vast majority of the people. Closely connected with this is the bribery and corruption not only of ordinary citizens but also of officials throughout the length and breadth of the land, and the constant terrorism exercised over the masses by those of higher and richer position because of their ignorance and consequent fear and weakness of the masses. This does not mean, however, that the material with which adult education has to deal is at all hopeless. Even though the Indian peasant is half-starved and in an altogether pitiable condition physically and mentally, yet he has within him rare qualities of generosity and affectionate response to real and unselfish service. Moreover, we know from his past history that he was not only a participant in but the administrator of local self-government, which settled all minor disputes and problems of the community. Nor should we forget in our praise of the peasantry that an outstanding leader of the people like Gandhi comes from the urban middle classes, and that part of them—namely, the moneylenders—which has done as much harm to India as any one group of men could do.

GENERAL CONCLUSIONS

From all this it becomes the more obvious that the rôle of adult education in India is to improve the economic position as well as the cultural and intellectual level of the ordinary citizen. The results of such work, including everything from handicrafts and physical education up to the highest levels of a liberal education, if carried on in the spirit of truth, should have a revolutionary effect upon the people within a comparatively short time. Those who know India today and can compare it with the India of a

generation ago cannot but be amazed at the tremendous changes that have taken place in its political, social and economic life. How much greater the changes might be in another generation if the present efforts were multiplied a hundred or a thousandfold can scarcely be imagined! But those of us who are anxious that India should one day become a free democracy, associated with the other peoples of the British Commonwealth of Nations, believe that the training of the mind and body of the ordinary Indian should lead first of all to the revival of those local institutions and crafts which flourished in India at the time of her greatest glory. This does not mean that we would like the clock set back. On the contrary we are anxious that India should assume her place among the comity of nations as an equal in every way. But it is clear to those who have struggled and are struggling for democracy in this country that the basis of any real democracy is local self-government. Aside from the obvious improvements, both physical and cultural, that would derive from a thinking, creative population, perhaps the greatest blessing that would come from the extension of this work would be the creation of an independent, thinking populace that would be responsible for their local government, with a basis of representation related more to service to the community than to wealth of possessions, and a populace capable of criticizing intelligently the activities and motives of its leaders.

This is not the place to embark upon a voyage of praise of India for her great contributions past and present to the cultural heritage of the world. I merely desire to call your attention to the fact that India has the oldest and richest cultural tradition in the world, and that this tradition, although it has been sleeping for some time, is already awakening once more, and will with the proper care and direction enrich the future of the civilized world, even as it has her past. Adult education is no easy high-road to the solution of India's problems, but it is the only possible way that her citizens can be brought to the point whence they may survey the difficulties before them and plan out how to meet them. In this day when dictatorships are the fashion and people are taught not to think for themselves, it would be a

tremendous thing for the social life of the whole world if three hundred million people in India turned their backs against the easy road of dictatorship, and determined to travel up the long and difficult road of real education resulting in democracy, a road long and difficult, but one, the only one, which may lead them to truth and the fulfilment of man's most cherished dreams

DISCUSSION ON THE FOREGOING PAPER

A joint social meeting with the National India Association was held at the Hotel Rubens, Buckingham Palace Road, S W 1, on Thursday, June 30, 1938. After tea a paper entitled "Social Implications of Adult Education in India," by Mr Banning Richardson, General Secretary of the All-India Adult Education Conference, was read. Mr S H Wood, Director of the Department of Intelligence and Public Relations, Board of Education, England, was in the Chair.

THE CHAIRMAN It gives me very great pleasure to preside at this meeting. The proper function of a Chairman is to offer a few remarks while everyone finds a seat. I find my duty today is to occupy a few minutes to see if the lecturer turns up, as he is not here at the moment! Professor Rushbrook Williams has very kindly consented to read his paper, but in order to give Mr Richardson the opportunity of arriving in time I am going to make a few remarks.

There are ordinary chairmen, bad chairmen and brilliant chairmen. The bad chairman is the one who attempts to traverse the ground which the lecturer is going to cover. I am not going to be a bad chairman, for the very good reason that I do not know anything about adult education in India. The brilliant chairman is one who, although he is only spinning out time till the late-comers arrive, says something really fundamental or provocative. I cannot hope to do that.

I am an ordinary chairman, who intends to occupy a few minutes by saying something quite platitudinous. My platitude is that if adult education furnishes a difficult problem in this country, its problems are multiplied tenfold in a country like India. I will make one other platitudinous remark, that is, that when we are talking about adult education, we must at all costs get a broad conception and not a narrow conception of what education means. Education is much more than literacy.

(Mr Banning Richardson's paper on "Social Implications of Adult Education in India" was then read by Professor Rushbrook Williams and, after his arrival, by the author.)

THE CHAIRMAN I am sure you would like me to congratulate Mr Richardson on the serenity and the skill with which he took up his half-read paper and conveyed to us the other half. (Applause.)

I hope we shall have a very profitable discussion, and I will ask Mr Littlehailes, who has a long record of educational service in India, to open it.

MR. R. LITTLEHAILES I am sure we are very grateful for the address that we have just heard. My experience is practical, having been faced with the hard facts of Indian education for a few years—thirty-four, in fact. I

have found that, more essential than adult education in India at the present time is the compulsory education which India has not yet enforced, and as a corollary to that, facilities for the education of those who have reached the school-leaving age immediately after they have reached that age.

It has been found in other countries as well as in India that persons who have once been so-called literate rapidly lose their power of writing. That was found in England during the time of the war. In 1914-18 many people who had been literate in England were found to have become illiterate, although they quickly regained their literacy afterwards. So it is most essential in my opinion that the greatest energy should be applied, not so much to the grown-up who has already got into ways which it is difficult for him to overcome, lassitude due to age and climate combined, but to concentrate upon youth. If the youth is concentrated upon, there is, in my opinion, much more hope of rapid success in the education of the adult population in India than in any other way.

It has been suggested that this education should take various shapes. Quite true. One of the most successful adult schools that I have come across in my time was in connection with the Buckingham and Carnatic Mills in Madras. Those are among the largest and best run mills in India. The employers discovered, what has also been found in England and in other places, that the uneducated workman was not so good as the educated workman—I do not mean by educated merely ability to read and write, but educated in the technique of his workmanship. A great many years ago not only were schools started for the children of the employees in these mills, but night schools were started for the employees themselves, and the education given there was for those who were absolutely illiterate, for those who had reached a certain degree of literacy, classes were offered in technical instruction, similar to the elementary classes that were in vogue in England in the old Board of Education science time, about forty or fifty years ago. At that time there were night classes offered in technical subjects, which were attended by people who wished to better themselves in life. That is practically what it amounted to. That is the best type of night school which I have come across, or one of the best types, in India. There the employers saw what the workmen needed, and they offered that particular form of instruction to them.

Looking at the question generally, it appears to me that there are various methods of approaching the adult. One of the methods is by means of circulating libraries. Circulating libraries have done a great deal. I have come across them in Baroda and in Madras, and in both places they have done an enormous amount of good to the adult population. The majority of the books which are read are of the most elementary character in the vernacular.

Incidentally I might mention that the whole of this adult education must, if it is to reach the people, be delivered in the vernacular. Inasmuch as there are two hundred odd vernaculars in the country and that we are treating an urban as well as a rural population, you will realize that what is suitable for one place is not suitable for another.

Another method is by getting the people attached to social centres of some

kind In a social centre you have various methods of approach. One of them is the delivery of lectures on general topics of interest, lectures which are suitable to the people likely to attend; those who attend in the country will be very different from those who attend in the town

Lastly, one of the most important factors is the use of the wireless in disseminating knowledge and giving men an interest in everyday affairs, after the interest is created, they will desire to know more, and we should then need to have schools attached to the various centres

I have thrown out a few suggestions There is no need to enter into the reasons why adult education has been a failure in the past We know, if we read our reports, that teachers and pupils alike have failed What we have to do in the future is to break down the illiteracy of the country and to make the people an educated democracy

Professor G H LANGLEY There is one point arising out of Mr Richardson's interesting address on which I might make a further suggestion In the course of the address Mr Richardson pointed out that adult education in India can only be accomplished on a large scale provided large numbers of voluntary workers of suitable ability are found, and he drew attention to the possibility of obtaining help from enthusiastic university graduates From my experience as Vice-Chancellor of the University of Dacca for eight and a half years I am convinced that if adult education were organized in university centres it would be possible to persuade considerable numbers of students to obtain a certain amount of training and to devote a certain portion of their time to the work of teaching This assumption is based on my experience of the Social Service Leagues, which were organized and carried on by university students in connection with each of the three halls of residence of the University of Dacca Adult education did not, at the time of my Vice-Chancellorship, form part of the work of these Leagues, but each of the three Leagues established one or more night schools for poor children who would otherwise have little opportunity for obtaining education, either in the neighbourhood of the Hall concerned or in some village in the vicinity These schools were started during the Vice-Chancellorship of my predecessor, Sir Philip Hartog, and so far as I know they are being continued till the present time Throughout the period in which I was in touch with this work groups of university students who had taken it up maintained their enthusiasm and carried out their responsibilities with devotion and a certain efficiency I therefore see no reason why they should not participate in an organized effort for adult education with similar earnestness.

Further, it was suggested in the address that adult education would contribute towards the solution of the problem of untouchability and the breaking down of caste Certainly the influence of groups of enthusiastic student workers would make for this end From 1920 onwards the Hindu students of the University of Dacca showed very great enthusiasm for the removal of caste distinctions, so far as eating and drinking together are concerned In 1920 separate arrangements for dining were made in each of the Hindu halls of residence for orthodox members of the higher

castes and the caste traditions were strictly observed. But these special arrangements were gradually abandoned by the University and hall authorities owing to a radical change in the attitude towards them which took place among the students themselves—the leaders in this change being for the most part Brahmin students who had themselves accepted the more liberal outlook. By about 1929 both Hindu halls had ceased to make any special provision for the dining of orthodox students, and at the same time no change had been made in the conditions for admission to the halls—that is to say, they continued to admit all applicants who possessed the necessary academic qualifications irrespective of the caste to which they might belong. From that time onwards there were common dining arrangements for all Hindu students in each of these halls. Members of all castes dined together, and their food was prepared under the same conditions in the single hall kitchen. If students of this type therefore were to take part in any scheme for adult education they would presumably be inspired by a similar purpose.

Dr D N MARRA (Bengal Social Service League) I believe adult education fills the same part in the field of education as friendship fills in the field of human relationships. Beside the relation of husband and wife, father and children, brother and sister, friendship fills a big and great place in the field of human relationships.

I understand by adult education something different from, and more than, ordinary night schools and so on. It is meant for *all* adults, even children. It is not a mere move for removal of illiteracy—it may include it. It fills up the large gap which is not filled by ordinary educational institutions. It seeks to give such a broad and all-round education in a simple form as would tend towards the fuller life and fuller living—economic, sanitary, educational, political, philanthropic. If I were asked to choose immediately only one thing that was most needed for India today—self-government, sanitation, wealth, education—I would say education. For education (knowledge) is the light and the strength that would enable us to acquire and maintain the others.

We must remember that India is not Europe. Its soil is different from that of Europe. The first purpose of adult education would be to furrow the inert soil of the mind, to create an aspiration amongst the people to know more, be more and do more. Without creating such an aspiration, it would be like sowing seeds on a dead soil. Create that aspiration by telling what a fuller life is.

That is why from the Bengal Social Service League we have been delivering an average of a thousand lectures a year on a variety of subjects, with lantern slides, charts, models and cinema, to create interest, arrest attention and stimulate action. Adult education seeks to fill that big gap. Literacy helps to cut a road through the dense jungle of illiteracy that may broaden into a highway.

This is a field where England and India could co-operate, and it would supply a cement of great and lasting friendship between India and England if we could both co-operate. Adult education has not been so far tried sufficiently in India. It is just beginning to be tried.

Therefore I would suggest not to go to the students only. They are much occupied with their examination affairs. One cannot get continuity of action from them.

We should engage a band of intelligent good speakers with a fair amount of general basic knowledge, train them into social workers and need not pay them high salaries. That is my experience of about twenty-four years in this kind of work. Engage them, train them, send them out to the areas and villages with necessary equipment, and they can educate—*i.e.*, open up the windows of the mind of the masses—and just give them a taste of what adult education might be, creating a taste and desire even for literary education.

MISS CASHMORE I am extraordinarily interested in our speaker's views in two directions. One is in what he said about dictatorships. I feel that there is a vital need in the Indian villages now. Here is education coming. Here are all these ardent young men, hundreds of them, at the universities, girls coming out from the universities determined to serve their country. What is the content of the adult education they are going to give? That Mr Maitra has indicated to us. If we only have that breadth of friendship between the speakers and the villages, then the thing will begin to grow.

It is perfectly laughable to see all the great guns, as we call them, come down to a group of villages, and talk, and then all go away. Then when they have gone, we give it up, and settle in. Of course, success really depends, and it is a supreme issue, on having people—Indians themselves and English wherever you can find them—humble enough to be in the villages, to sit by the well, to spend their evenings there, just to give education as you give to your own friend at your dinner-table in the evening. It must be quite as informal as that.

I want also to speak about the women. I find with my very small experience in Indian villages that the women have a very great influence, and that that influence is entirely conservative. I do not speak of the great associations, such as the All-India Conference of Women, but of the villages. In the villages they have complete control of the children till the age of seven. We all know that if you have complete control of children up to seven, you have grounded them. You men for ever talk about the men and boys, and when I go round the village schools there are few girls there, when they are compulsory for both, there are two little girls sitting there, or three little girls, and the rest boys. It has not yet got into our heads that the women are a profound influence in the village. They are very practical, they have a great authority. They are fundamentally conservative. They make the root difficulties, because they cannot go out in the world to the same extent as the men and pick up education. The educated Indian women know this now, but there are very few compared with the number of educated men.

There is a third point. We have been making very interesting experiments with wireless. Of course, it is a most terrible din. We are out in the jungle, and all over the jungle that wireless from our place sounds out. The radio is a great opportunity, but it can be used, as we know in Europe,

with the most dire effect if it is turned to propaganda or anything against freedom of thought. It is an instrument of great betterment or of great destruction. I feel, when we all gaily say we ought to have wireless sets, we do want to make small experiments in our villages and see what people really make of it. Our people will come from all the villages round and sit listening

You will have to remember one thing about the wireless. You hear voices, voices, on the air, but there is no visual representation. Indian minds are extraordinarily graphic. You know how they hold us by putting everything into pictures with words. You have to remember you have no demonstration, you simply have those voices on the air. You want to imagine its effect on perfectly uneducated people and learn from experience what they make of it.

MISS MARY SORABJI. I do want to say this, that the women of India have not had their chance, as the men of India have. When the women are educated, then we may look for a very great advance amongst the people of the towns and in the villages.

From my own experience of thirty years, where one had to do pioneer work among women, I had to teach adults, and they were so marvellously responsive, so eager to drink in all that one could teach them. I felt that they could teach me much about life which I, as a young woman, did not know. The way to approach them was in the spirit of friendship and the spirit of love and understanding. I never forgot that throughout all my educational service in India, which was not only in Poona, but in Baroda and in Ahmedabad.

If you educate a man, you simply educate an individual. But when you educate a woman, the wife and mother, you educate the whole family. So I do ask that those who have anything to do with the future of India in this new day will emphasize, foster and forward every step towards the education of women in the right sense, not in a narrow, academic sense, but education in its broadest aspects—in short, the way to live. If you could make that your aim, all of you who have anything to do with education—my own countrymen especially who are going out into the educational service—if you will foster and help forward this, then we shall see a new day dawning in India, when the mother in the home has her children around her, educating them as only a mother can.

When she can create in her family the spirit to go forward, to do the best they can for their country and for their nation, when the woman gets that power, as she has had in the West for so many years, then India will come into her own. The Indian women have marvellous characteristics and wonderful gifts of mind and spirit—for instance, the capacity for endurance, infinite patience and self-sacrifice—which they might teach the world. Emphasize the education of women in India, and then we have a very happy future before us.

THE CHAIRMAN. I am sure we are very grateful to those who have taken part in the discussion. Mr. Richardson says that he has no desire to reply, as there has been nothing controversial in the discussion.

I only want to add one thing. It seems almost foolish to emphasize the importance of the education of women after what we have heard in the discussion, but I do want to say this, even if I am emphasizing again something I said when I had the privilege of addressing this Association some months ago. I believe the beginning of adult education for women in an Indian village is to put a really happy infant school in that village and ensure that it does something for the children, which the mothers cannot do themselves, but which they appreciate when it is done. Mothers will then get in touch with the school, and will realize that they are part and parcel of an institution which is helping to bring education and interest into the lives of their children. Out of that will arise some kind of educational centre which meets the real needs of the village, and you will then find, I think, that the women achieve this thing which we call adult education.

I am convinced that the key to the adult education of men is the adult education of women. Indeed, the key to a thousand and one things in India is the education and the emancipation of women. (Applause)

SIR SELWYN FREMANTLE. I have been asked to move a vote of thanks to the lecturer. When I saw the title of the paper, *Adult Education*, I was rather suspicious, because having been very many years in India I have some experience of the pathetic reliance placed generally in that country on what literary education can do.

I was mentioning, while we were having tea, to my neighbour a little incident that occurred to me when I was Collector of Allahabad. I was discussing the planning of a certain part of the town with a leading politician. In the middle of the academic quarter there was the district jail, which was very objectionable to everybody, and the land which it occupied was very badly required for the extension of various educational institutions. The trouble was, as I observed to my friend, to find a site for the jail somewhere else, because Allahabad is enclosed by rivers, and it was very difficult to find any suitable site. He said, "But with the present extension of education that is going on, we shall soon not require a jail."

I consider quite seriously we might be able to reduce the number of jails, but I am afraid, as our lecturer said, education may lead to good or it may lead to evil. Certainly literary education cannot be relied upon to do nearly as much as it is expected to do in India.

Some of the discussion has been rather academic. We have had learned professors and principals of universities, and they have given their views. I was very glad when the lady speakers got up, because I think it was an omission in the lecture that there was no mention of female education, which we know to be the key to so very much.

But I do feel that we are under a debt of gratitude to our lecturer for putting the case in the very clear and logical way in which he has put it. (Applause) Though not in the Educational Service myself, I have always been very keenly interested in the subject during a very long service in India, and I do feel that what is necessary is what is now being done—*i.e.*, that the adult education which the peasantry at least require is the initiation into these various schemes of improvement, improvement in agriculture, in

sanitation and health (which is not mentioned in the paper), but it is all an introduction to a new view of life and to a higher standard of living

In my opinion the building up of the local panchayats, to which he has referred, is something which will create interest and arouse the attention of the people and increase their sense of responsibility and self-respect in a way that no other portion of the rural reconstruction programme is likely to do

I feel we owe Mr Richardson a great deal for the way in which he has brought this subject forward, and I hope that if he is Secretary to another Conference of the kind which he has mentioned here, he will be able to induce the members of the Conference to agree to the views which he has put forward so ably

The vote of thanks was carried by acclamation, and the meeting closed

THE GARDEN PARTY AT FOXWARREN PARK

By MRS L. M. SAUNDERS

ON a Saturday afternoon in June Mr and Mrs. Alfred Ezra were at home to some three or four hundred members of the East India Association and other guests whom they had invited to see the aviaries and zoological specimens at Foxwarren Park, near Cobham

Many of the visitors went by car, and motor-coaches waited at St. James' Park Station to convey others who made the journey from London. An atmosphere of Saturday afternoon calm and leisureliness had already settled on the streets near the station. As they took their seats in the comfortable coaches, that sense of leisure must have been communicated to everyone except, perhaps, to Mr King, the indefatigable assistant secretary, who had some busy moments scanning lists and faces to make sure no one was left behind before the coaches moved away through the unwontedly quiet streets of Westminster and then took their places in the flow of traffic moving swiftly outward from town.

They sped through Putney and Kingston and out on to the Portsmouth Road, and there was time only for a passing glance at the old inns and the old houses, and perhaps for a passing thought at the changed character of such estates as Claremont and Esher Place. At the former Prince Louis Philippe of France lived, and there his queen, Amelie, continued to make her home after his death. Princess Charlotte and the Duchess of Albany have lived there in more recent times, and at Esher Place King Edward VII used to stay to be near Sandown Park, his favourite race-course. The River Mole, in which King Edward used to fish, is close at hand.

Ten miles from Foxwarren Park itself direction posts had been erected to help drivers to find the quiet lanes and the long drive which led finally to this retreat.

There was a sound of music as the guests alighted and moved towards the lawn, where Mr. and Mrs. Ezra stood to receive

them The hostess was a striking and stately figure, dressed in an oyster-coloured gown and wearing a hat with a wide sweeping brim round which two plumes curled, one of oyster colour, the other of flamingo red Her two daughters were with her, as was Lady Ezra, and they shared with her the task of hostess. Tea was served in an immense marquee of green and white striped canvas, designedly so large that it could have afforded ample protection in case of rain On every table stood a bowl of sweet peas, giving a first impression almost of a flower show

In the gardens beyond other sweet peas grew in lovely profusion, and in their glasshouses the kindly fruits of the earth, peaches and nectarines and vines laden with green grapes, vied with the flowers in their beauty Nearby the band of The Welsh Guards played throughout the afternoon, and a little group of interested onlookers belonging to the estate and their children sat in the shade of some trees by the bandstand to enjoy the music and to watch the passers-by Some of the guests had dispersed to more distant parts of the gardens, but a few were strolling across the lawn when the Maharaja Gackwar of Baroda arrived from Aldworth House, Haslemere Soon after a large car from London of unusual colour drove up, and from it stepped the Maharani of Baroda They were greeted by the host and hostess, and together they moved towards the house, from which there is a view of the country for many miles The view was clear on that day and yet the outline was softened as if seen through a transparent veil, with a silver streak revealing the Thames in the far distance

With eyes on that wonderful prospect, it was possible to stray almost inadvertently towards that part of the great park, which is in all more than 300 acres in extent, where the animals live Banks of rhododendrons, in full flower, and other shrubs masked the railings which enclose the spacious hills and valleys and the pools of water which are the home of the antelopes, the kangaroos and the rare birds which enjoy almost complete freedom under Mr. Ezra's care Sir David Ezra has a similar collection of animals in Calcutta, and it would seem as if this love of animals were a family trait, combined with a faculty for caring for them with deep understanding, so that kangaroos with their young

watched the guests almost without fear, letting them approach within a foot or so. Herds of antelope bounded up or down the hillsides with superb grace, yet now and then a doe would come and rest its head against a hand stretched out to stroke it, in complete confidence. Mr Ezra himself conducted a party of his guests to the breeding pens, showing them, among other birds, a parrakeet the colour of which is unique in the whole world. There were crested guinea fowl, white peacocks and peacocks with feathers of many colours, there were jungle cocks scampering through what amounted to real jungle, which served again to render unobtrusive the railings which give the rare creatures their safety and their freedom.

London seemed very far away from the sanctuaries and the smooth lawns where again the guests were gathering, this time to make their farewells to Mr. and Mrs. Ezra. The kindly guiding hands of special police and A. A. men were there to point out where the waiting cars and coaches lay hidden by a belt of trees, and as the motors started up two llamas rose from behind a hedge and gazed in faint surprise at these strange sounds and sights with which for a time their quietude had been invaded.

SOME ASPECTS OF CHEAP POWER DEVELOPMENT UNDER THE NEW CONSTITUTION IN INDIA

BY SIR WILLIAM STAMPE, C I E

Chief Engineer (retired) Irrigation Development, United
Province (1931-1937)

THE objects of this paper are to review briefly the scope and possibilities for the development of cheap power for industrial and agricultural purposes in certain parts of India and to outline the steps which are now being examined in some provinces for the implementation of projects designed with this end in view. It will be admitted that the industrial progress of a country and the rate of improvement in the standard of living depend to a considerable degree on the organized development of those sources of power which can economically be made available.

The present moment seems opportune for such a review, as Provincial Autonomy has now been in actual operation for more than a year and Congress Governments, admittedly highly interested in social and economic problems, have been functioning as practical administrations for about the same period in various Provinces.

To the non-political observer like myself it is very significant that, with war and chaos prevailing in China and Spain and political complications threatening in various other parts of the world, there is presented in India at the present moment the spectacle of a number of autonomous Provinces marching confidently out on their ordered political careers with clearly defined objectives before them. These objectives include, in several instances, the development of important schemes for the production of cheap power and, with it, the reduction of unemployment—that spectre which threatens so ominously the horizon of the educated youth of present-day India.

UNEMPLOYMENT

Apart from its social and economic importance, this problem of unemployment is fraught with special danger in the East

owing to the risk of our educated youths drifting into undesirable political activities when their faculties are not kept constructively employed. The industrial and agricultural development of India has thus a special significance if the talent of the rising educated generation is to be mobilized for the good of their country.

Many of those present today have doubtless read the views of the Right Hon. Sir Tej Bahadur Sapru, who presided over the Unemployment Committee of 1936 in the United Provinces and who studied the local problem in all its aspects. One paragraph of an important lecture on unemployment to the youth of the Punjab I should like to quote *in extenso* as it has an important bearing on my subject.

"While I realize the growing importance of vocational education and industrial training, I also feel that such education and training by themselves cannot solve the problem unless each province assumes responsibility for developing those wealth-producing activities which alone can find employment for our young men. If the Government are prepared to spend more money on the development of the resources of the country a great deal more may be done."

These are the views of one of the great Indian thinkers of today, and one who has spent several years in a close study of this question both in India and abroad. The projection and financing of large public works, especially those for cheap power development, is admittedly highly important, viewed from both the commercial and the social-political angles.

DISPLACEMENT OF MANUAL LABOUR

It is desirable to anticipate and to attempt to answer a question that has often been asked by my Indian friends when the subject of cheap power has been under discussion with them. "How can the worker be benefited when his labour is displaced by a mechanical process operating, *ex-hypothesi*, at a cheaper rate?" The stock reply that this question was raised in Western countries more than a century ago and was automatically countered by the absorption of labour into more profitable channels usually cuts little ice with my Indian questioners. Nor is the answer in itself completely sufficient as applied to modern India. A higher stan-

dard of comfort and wealth prevailed in the West even in those distant days. Its cooler climate demanded the manufacture of more clothing and more food. Its evenly distributed rainfall—in normal years—ensured the country against food shortage. These factors, together with its better distribution of coal and the heavy minerals and the higher earning power of its people, tended to absorb usefully the population rendered for the moment surplus by mechanization in the West, more rapidly than can be the case in the less developed social and economic structure of the East. For these and other less obvious reasons, an answer which would apply to the West will not necessarily fully meet the case of the modern East. For the sake of Indian readers I would quote in support of the further mechanization of agricultural industry, certain parallels which are more relevant to our present local conditions.

For instance, prior to the introduction of systematic irrigation in India, water could only be lifted from wells of varying depths by animal or manual power. The advent of the so-called "gravity" canal system, under which water flowed spontaneously into the fields under command, quickly led to the displacement of millions of cattle and men from this service. It is only in tracts which lie outside the command of the canal (or where river supplies for irrigation are occasionally short, due to seasonal variations) that cattle (and sometimes men) are still employed on water lifting. In spite of this if a census were taken it would probably be found that there are now not less but more cattle in these areas. Why is this? One reason is that all the old and many new cattle (and men) have been absorbed into means of utilization more profitable to their employers than the primitive "drawing of water" of former times. Larger areas, ensured of timely protection against drought, are now safely cultivated and more intensive ploughing as well as double cropping is employed. Better crops requiring more animal and manual labour in their cultivation and transport are being laid down and a greater yield both in tons and rupees is secured to farmer and labourer alike. This phenomenon is of such interest to the observer of Indian labour conditions that I should like, with your

permission, to quote an important example which recently occurred in the Meerut district of the United Provinces where, on the advent of cheap electricity, manual power was immediately diverted and absorbed into more profitable agricultural effort

Prior to the widespread electrification of the rural area served by the Ganges grid scheme which I shall shortly refer to, the water of a certain irrigation canal, flowing some few feet below the level of the surrounding fields at that point had to be raised on to the ground by hand-lifts, which took the form of baskets (or "Bhokas") swinging on a rope held by two men

Thousands of men were engaged yearly in this particular tract alone on this rather soul-destroying work of swinging a basket of water from a ditch on to a field. When cheap electricity became available—generated on the adjacent canal falls—it was proposed to pump the canal water electrically into a locally raised channel so as to command the fields of this high tract by gravity. The cultivators would, under the irrigation rules, have to pay twice as high a rate as formerly obtained per acre for their water, but on the other hand would save the manual labour hitherto employed. As this would obviously affect their village economy and would constitute an important precedent for the future, we decided, in the irrigation department, to take a referendum of the villagers concerned. More than eighty per cent of the people voted in favour of the scheme, which was immediately carried out and for some years has increased both the area sown and the yield of the crops in that locality as well as the canal revenue. The labourers released from water-lifting are at present employed more usefully in weeding and tilling the more expensive crops now being grown. The same principle, I submit, applies *ceteris paribus*, to other forms of agricultural mechanization.

The economic position is much the same in the electric-driven tube-well irrigation system recently introduced on a large scale in the western districts of the United Provinces, and to be referred to later in this lecture. Millions of cattle and men, formerly employed in the primitive but then essential task of lifting water from wells and tanks, are now engaged in increasing and improving the cultivated area and producing a higher yield of crops for

the local as well as for distant populations. Similar arguments apply *mutatis mutandis* to the displacement of the bullock by the railways and the motor lorry as a means of more rapid transport.

In quoting these examples it is not my intention to develop *ad nauseam* the case for mechanized production, but to show by a few concrete instances that the old arguments used in defence of mechanization in the economy of the West apply in general to the modern phase of cheap electrification which is now beginning—slowly but surely—to magnetize India. I would express my opinion in passing that the pace of mechanization is not likely to be deterred by the advent of the Congress Party in some Provinces.

OBJECTS OF A GRID SCHEME

Turning now to the general question, the importance of generating and distributing cheap electric power for industrial and domestic purposes was realized in Britain, as you all know, in the early post-war years, and was implemented in the Electricity Act of 1926 which was passed by universal consent as a measure necessary to the installation of the great British grid system. Other nations took similar steps, either before or after Britain, with the result that in most Western countries—as well as in Japan—power has now been cheapened and its availability extended by the inter-connection of the efficient generating stations and the elimination of the more antiquated plants. As an appreciation of certain basic principles of cheap power production is essential to a clear understanding of the Indian problem before us I would ask your indulgence whilst I summarize briefly the principal factors underlying the economics of a so-called “grid,” or connected, electricity system.

The general idea in initiating a grid for serving a series of towns from a central station (or stations) is twofold.

Firstly, by substituting a large generating plant located approximately at the electrical load centre of the area of supply, for a series of small and therefore comparatively uneconomical plants sited in the various towns, the cost of the bulk supply of power in these towns can usually be considerably reduced.

Various factors contribute to this reduction. For instance, the initial cost per kilowatt of large generating machines is much lower than that of small ones. The capital provision for standbys or spare machines can be proportionately lowered as, being interconnected, the towns can help each other in the event of local trouble. Again the recurring overhead, operating and maintenance costs of large central stations are lower than those incurred on a series of smaller separated stations. The initial cost of expensive fuel-saving devices can be justified on large plants whereas it would be disproportionately high on small ones. Finally, advantage can be taken of the important element known as the "diversity of load" which usually prevails in the case of a series of connected towns. Briefly put, this phenomenon results from the fact that the "peak" or maximum daily load in each town does not usually occur at the same hour of the day. The "peak" load on the central station is thus substantially less (usually by thirty to forty per cent.) than the sum of the peaks in the various towns. The capacity and cost of a central plant can therefore be considerably less than the aggregate capacity necessary to serve a series of detached places. Against these various factors which make for economy on a central generating station, there must of course be balanced the cost of the inter-connecting transmission system with its transformers and sub-stations. The capital cost of the latter will in many cases exceed any saving that may be effected in the cost of the generating plant.

The economics of every such case, which depend on a number of local factors, must of course be separately examined and the savings realized on generation carefully weighed against the increased cost of transmission into outlying districts. In the generality of cases, however, the net cost per unit of electricity delivered over the system is likely to be lower on a grid than in a series of small local generating stations.

Secondly, the grid system by traversing the tracts between the large towns can be made to benefit those smaller towns, large villages and agricultural zones, which, owing to their individually lower demands, could not in many cases justify the local generation of electricity at a price cheap enough to bring it within the grasp of the local consumer.

In England, were it not for the grid, a large proportion of the population now enjoying electricity would have to forego it, and on the Ganges Grid in the United Provinces the demand in no less than fifty out of eighty-eight towns connected to the system could not have justified the installation of local plants for many years to come—if ever. Large agricultural areas would never have known the advantage of cheap electricity, nor would the vast tube-well irrigation system have been possible.

MANUFACTURING INDUSTRIES

Turning to the field of minor industrial development, I would quote the instance of the expansion of the brass turning and polishing industry in Moradabad and other towns in the United Provinces as a result of the availability of cheap grid power. Scores of small factories have been electrified and are producing brassware at cheaper rates than were possible under the old manual system, thereby ensuring a larger field of demand and greater scope for employment. In the flour-milling industry—especially in the vicinity of large towns—flour which was formerly ground by the cottage hand-mill is now being electrically treated and the labour thus released—largely that of women—is being profitably employed in cutting grass, weeding and other relatively more useful directions.

In the Punjab and Madras, where electric grid systems are now in successful operation, cotton spinning and weaving mills, both large and small, as well as cottage hosiery plants, are rapidly being connected. In the United Provinces, two cardboard factories have recently been electrified which absorb large quantities of wheat and rice straw and give direct employment to large numbers of men and cattle both in transport and in actual operation.

It is perhaps unnecessary at this stage to emphasize further the importance of cheap power in developing the industries, expanding and improving the agriculture and benefiting the social economy of the Provinces and States of India. The fact that a number of Governments have completed large schemes and that others have discussed the development of power grids with the

author during the last few months indicates that the local Governments are fully alive to its immense importance

The precise manner of power development must of course vary locally according to the different resources of the various Provinces such as minerals, degree of industrial development, water for irrigation, types of crops grown, means of transport, accessibility to large markets, and the degree of social development reached as a measure of economic demand. The essential point I wish to make is that cheap power is one of the important solutions of most of the economic problems common to all Provinces.

The next point to make is that for the reasons I have quoted in justification of the grid system few Provinces can have an effectively cheap power system by means of local generation in the various towns. On the other hand, it is equally essential to secure a sufficient number of concentrated loads on a grid system—especially in the early stages of development—to justify the comparatively heavy outlay on the transmission lines. For instance, in the United Provinces, as we shall see, a number of large pumping installations helped to justify financially a large proportion of the initial network, and the gradual expansion of the tube-well system later justified the extension of the network into the villages and the countryside.

PROVINCIAL POWER DEVELOPMENT

Turning now to the specific form which power development, as undertaken by Government agencies, has already assumed in various Provinces, I propose to quote three instances in the Punjab, Madras and the United Provinces respectively. The activities of the latter Province, which are better known to me, will be described in rather more detail as an example of what can be done to cheapen the cost of power and increase its field of utilization, especially over the rural areas.

In the Punjab, during the period 1924-1933, the waters of the Uhl river, a tributary of the Sutlej, were ingeniously harnessed at Jagindra Nagar in Mandi State by constructing a tunnel, on a short circuit, through a spur dividing a loop of the river in the Himalayas. In the first so-called "stage" of the project

36,000 kilowatts can be usefully developed out of 48,000 kilowatts of high-pressure turbine plant installed. The power is carried on a double circuit line some 250 miles at 130,000 volts pressure to a large distributing sub-station at Lahore, and thence distributed by a series of lines to some fifteen towns, large and small, including Amritsar and Lyallpur. The load at present mainly comprises the energizing of urban industries such as the vast workshops of the N W Railway at Lahore, large weaving and spinning mills at Lyallpur, and the operation of smaller factories such as hosiery and weaving plants as well as local flour mills. The use of electricity is also spreading into the smaller towns and villages, and experiments are being conducted as to the suitability of the local subsoil for the construction of tubewells both for supplementing the existing canal systems and thus releasing water for the expansion of irrigation elsewhere and for direct local irrigation on the lines successfully adopted in the United Provinces away to the east of the Jumna river. The question of giving a bulk supply to Delhi Province from the Uhl river scheme is, I believe, now under consideration. The construction of a main feeder line from the power station to Delhi would confer a double advantage on the Punjab. Whilst enabling surplus power to be sold off to a ready-made market it would also open up the intervening country *en route* for pumped irrigation and agricultural power development.

In Madras, general electrification of the large and small towns, as well as of the larger intermediate villages and coffee and tea plantations, is proceeding apace under the Pykara project with its associated schemes of steam and hydro development. The important waters of the Cauvery river, which also provide power for Mysore State, are being further harnessed for supplementing the Pykara system.

THE UNITED PROVINCES GRID

In the United Provinces we now have in actual operation the final stages of the so-called Ganges Canal Grid. This scheme was outlined to this Association in a paper by Sir Edward Blunt, late Finance Member, United Provinces, in May, 1936, at the

time when the final stage of the grid was just being initiated. Without wishing to burden you with further details of the enterprise, I propose to describe briefly what has since been accomplished on its development, because the Ganges power system embraces two important points which differentiate it from other projects of a similar character. Firstly, the Ganges scheme was developed in a series of stages in each of which one or two of the seven canal waterfalls was developed, thus enabling the capital cost to be increased gradually as the load and earning power expanded. This procedure was fortunate in freeing the finance from the incubus of heavy initial capital outlay which usually cramps the early development of hydro-electric undertakings. This is especially the case with Indian schemes where the rivers are liable to heavy seasonal variations, thus involving large capital expenditure on storage reservoirs to cover the dry periods obtaining from April to June. Secondly, the source of power on the Ganges canal system, developed as it is on a series of canal falls, is located nearer to the field of utilization than is generally the case, thereby avoiding the incurrence of heavy capital charges on long transmission lines from the distant mountains to the sphere of utility.

AN AIR VIEW OF THE GANGES VALLEY

Perhaps the easiest way for me to describe what has been recently accomplished is to ask you to accompany me in imagination on an aeroplane trip over the electrified area. Imagine yourself landing first near one of the few still undeveloped waterfalls on the Upper Ganges Canal. There you will see 100 tons of water crashing to waste every second from a height of ten or twelve feet—equivalent to the loss of 4,000 horse-power or sufficient energy to energize some 300 of our tube-well irrigation pumps.

A few miles further down the canal at a similar waterfall, the situation has been changed. Gone is the iridescent spray of falling water. The hum of powerful machines revolving three times a second has replaced the thunder of picturesque cascades. There is hardly a sign of wasted power as the water emerges from the mouth of the draft tunnels and flows evenly down the canal.

towards yet another fall which has been similarly raised and harnessed. The current so generated at seven falls is transformed to the line voltage of 66,000 and carried over thousands of miles of wire to 80 towns and some 2,000 village substations now connected to the system

A large steam station at Chandansi brings the total power available to 29,000 kilowatts or some 40,000 horse-power. Half this, roughly, is utilized for irrigation pumping from rivers and tube-wells, and for agriculture generally, whilst of the remaining half, about a fifth is being allotted for domestic purposes and four-fifths for urban industries large and small

THE TUBE-WELL SCHEME

Let us now fly at a low level over the western grid area to see the effect of this cheap power on the villages already electrified. Spread roughly $1\frac{1}{2}$ miles apart, over the brown plain a thousand feet below us, each in the middle of its oasis of some 250 acres of green crops, there are the State tube-wells with their substations connected to the 11,000-volt feeder lines. On the white roof of the kiosks you see a number for identifying from the air each well in the various groups. From each well there radiate, as faint blue lines, the water-courses to the irrigated area. Near the local transformer there is sometimes a sugar-crushing and boiling plant or a flour or spinning mill, and you can see the cultivators bringing their produce in carts to be treated. Outside the State tube-well commands, what open wells there are left are still being worked by bullocks except at the three hundred or so "zamindari" wells which have already been electrified. Contrast this drier zone with the tube-well tract, where little white rings indicate the deserted wells of an obsolete régime and where the released cattle are ploughing up new ground in adjacent fields for the expanding crops. Gradually, too, bullocks are being released from the "kholus" where cane is beginning to be crushed for gur by electricity. This release of bullock-power for ploughing, carting—and also for longer periods of rest—is an important economic feature of the development, apart from the obvious value of cheaper irrigation for three-quarters of a million acres yearly. The

way is noticeable in which high sandy wastes known as "bhur" lands have been brought under cultivation by irrigation and by the supply of cheap fertilizers through the Agriculture Department. One area is noticeable where several square miles of such waste have been brought under intensive cane cultivation for a sugar factory by means of eighteen country-made tube-wells and the liberal use of fertilizers. This recent demonstration of co-operative enterprise indicates the scope that exists for private development throughout the 12,000 square miles of electrified agricultural area.

In fact there is to my mind little limit to the economic effect which the introduction of cheap power into a tract can produce, if boldly and wisely handled. Within the villages the oil engine is being rapidly displaced by electric motors, and the acrid smoke of oil lamps, with the sadness it typifies, is giving way to the brighter light of electricity—symbolizing the dawn of a better economic day.

At several tube-wells near villages, drinking and bathing amenities for both men and cattle, as well as loud-speakers announcing market prices and Indian music, are being installed. The non-canalized portions of the Saharanpur Muzaffanagar, Meerut, Bulandshar, Budaun, Bijnore and Moradabad districts have now been protected by the 1,490 tube-wells comprised by the Ganges scheme. A possible form of agricultural development which I recommended to my successors in the tube-well zone was the substitution of firewood produced in small, quick-growing plantations located near each well, for the dried cow-dung which is at present burnt as domestic fuel in all the villages. An acre plot of a few hundred "shishum" saplings near each well will soon produce enough wood to replace all the cow-dung and thus leave the latter as a humus carrier for the chemical fertilizers which the soil demands if full economic use is to be obtained from the tube-wells as an irrigation asset. The utilization of cheap power at "off-peak" periods as, for instance, during the non-pumping hours of the day and the non-irrigation seasons of the year, will enable agricultural processes to be mechanized at cheap rates, thus lowering the total costs of production and increasing the profit to

the cultivator as well as saving wear and tear on the village animals. For instance, in the winter season our irrigation pumps, which consume some 12,000 kilowatts in the daylight hours, are not usually working all night. If cultivators can be induced by the offer of cheap rates to work cane crushers and other seasonal machines at night the average cost per unit can be lowered for all purposes throughout the year and an economic advantage rendered to the consumer of power as a whole. Again, if part-time chemical industries can be organized for the extraction of nitrogen from the air for the manufacture of ammonium sulphates as fertilizers, the cost of the average unit can be lowered throughout the system. It is partly by co-operative efforts such as these that the benefit of cheap power can be extended to a wider range of needy cultivators.

EASTERN ASPECTS

Let us now change the course of our plane and fly along the Sarda canal towards the eastern districts. Prior to 1928, when the Sarda system was opened, this vast green tract extending from Bareilly to Unao was largely "khaki." It owes its agricultural salvation to the builders of this great canal. At the tail of the Sarda canal, on the right or south bank of the Ghogra river, a steam power station can be seen which supplies power to a pumping station which raises 180 cusecs for irrigation on the high bank of the river. The town of Fyzabad and some smaller villages are also electrified. A conspicuous feature of the eastern landscape is the contrast between the blue of the lower rivers and the amber of the intervening land. If one asks, "Need this contrast continue?" we will turn south to the lower hills of Mirzapur and Rewa to find a possible solution.

Below us, in Mirzapur and Rewa State, the rivers available for power development are almost dry at the season of maximum demand. We must therefore resort in such projects to the construction of storage reservoirs for conserving the monsoon waters in order to secure a perennial flow for the turbines. Preliminary investigations indicate that some 8,000 kilowatts can be generated in the Mirzapur district at a moderate outlay on reservoirs and works, and a larger quantity in the Rewa hills. A Committee of

irrigation and electrical engineers recently examined the power position in these regions with a view to the presentation of a detailed estimate to the Government. The project which is under consideration will provide for pumping considerable volumes of water from our lower rivers for irrigation on the high ground at present uncommanded by gravity canals. In effecting this, the supply lines must cross large tracts of country with small towns and villages all in need of power for agriculture, minor industries and domestic amenities.

It is clear that the abstraction of power from the Vindhyan range can afford only a partial solution of the problem in the eastern districts if loads develop here on similar lines to the west.

Two further solutions present themselves. The first is the interlinking of steam-driven stations to be located at suitable points and operated in parallel with the connected hydro-systems. Such stations would be partly "base load" and partly "peak load" plants depending on the rate of development of power demand within the area. Later on, as load develops, the period of working of these stations and with it the annual coal bill would gradually rise to an extent sufficient to justify the additional capital outlay required for the substitution of some cheaper means of operation. There is, however, an economic objection to the installation of the steam stations as a perennial means of power generation. The present price of steam coal delivered in our eastern districts averages Rs 13 per ton, of which about Rs 3/8/0 represents the cost at the pit's mouth and the balance the railway freight to the various sites. It is probable that the introduction of more modern equipment will react in the near future on the price of coal at the pit's mouth. Then again there is the possibility of an increase in railway freights or of a shortage of steam coal. From whatever standpoint we examine the question, it cannot be pretended that the fuel position of large up-country power stations is a really stable one. We must remember that for every unit generated a certain minimum cost in coal must be incurred. If, then, we are to develop on the broad lines which I visualize, we must turn to some other source of power for a final solution.

Before landing finally from this imaginary trip let us throw

back the "joystick," raising our plane over the Himalayas to the north, and fly along the southerly slope of the main ridge. One after the other, as we proceed north-westwards, the great rivers emerge from their hill gorges and enter the plain of the Ganges. Within the mountains far below lie the alternate bands of still black water in the ravines and the white cascades of the intervening rapids. Great loops occur in these streams, and it is to these that our surveyors must eventually turn to find sites for the hydraulic tunnels which must be cut through the ridges to enable the power latent in these torrents to be exploited for the service of man. Before our surveyors enter the Himalayas to prepare for the greatest power adventure that has yet been contemplated in the East, an intensive air survey must be made of these loops, followed by a hydraulic and geological examination of the local streams and rocks. The technical difficulties, first of locating and then of building suitable works for harnessing this power must not be discounted. It is yet by no means certain that they can be overcome. This may seem to us here today a fantastic and unwarranted dream, but I cannot emphasize too strongly to the irrigation administrators of northern India the necessity of studying beforehand the economics of these great problems, upon the successful solution of which the ultimate prosperity of the people so largely depends.

UNDERGROUND RESOURCES

There is one more aspect of the power position in the United Provinces on which I must touch this evening. I refer to the exploitation of those underground resources in regard to the stability of which so much discussion and thought have been devoted of late years. Whereas the surface water of most of the rivers has already been abstracted for irrigation, there flows a vast "river" 20 feet or so below the ground through the subsoil sands towards the Bay of Bengal. This "river," which supplies the tube-well system in the west, is to my mind one of our finest provincial assets. Just as in the case of minerals, a survey is conducted to determine their extent, so the underground water supplies were examined three years ago at the instance of the Government

by a geological committee. The question for examination was the degree of abstraction that could be safely contemplated. The project envisaged pumping one cusec of water from each square mile of country to be irrigated for an average period of 3,000 hours in the year. It had been asserted by critics that the tube-wells would gradually lower the subsoil water level to the detriment of the general cultivator. The report of this Committee, which was widely published, indicated that, provided the abstraction is confined to the stated figure, there is no danger of a permanent drop in the spring level as a result of tube-well pumping. The Committee in arriving at this conclusion admittedly took into account only the local rainfall as a source of replenishment of the subsoil supply. They did refer, however, to other possible sources of recuperation for which they took no credit.

Personally, in spite of the cautious attitude of the expert Committee, I have always held the view that, in addition to the rainfall actually falling on the tracts concerned, the local subsoil supplies are substantially reinforced by underground flow from the saturated submontane tract to the north, where not only is the rainfall more intense, but the percolation is heavier. A further investigation is now in progress to ascertain by borings the rate and intensity of this subsoil flow.

Finally, if I were asked when the programme of new electrical development will be embarked upon, I would answer by quoting a simple analogy. Road traffic is now controlled by what are known as "traffic lights" with their red, green and amber signals. Applying this parallel to the development situation in the United Provinces, for some years the signal for electrical advancement had stood at "Red". Neither the Government nor the Legislature were convinced of the ultimate soundness of the various schemes then being projected. Since the successful completion of the first stage of the Ganges Grid in 1934, the lights have been turned to amber whilst further investigation has been in progress. This reconnaissance has recently shown that there are no serious technical or financial objections to the greater projects now under review. I believe that very soon the progress lights will turn from amber to green and we shall proceed confidently with enterprises

capable of transforming large tracts of the Provinces from amber to the promising green of new crops

Perhaps I am an idealist, but I see in these activities more than the mere combination of overhead electricity with underground water, important as such a union is. I visualize in these measures the steady development of cottage industries on a wide scale, the gradual electrification of the farmyard and, with it all, that lowering of the cost of production which alone can really benefit both grower and consumer alike.

FINANCIAL CONSIDERATIONS

The criticism has been raised that not only is the capital cost of the Ganges Grid unduly high, but the running expenses, as measured in "pies" per unit, are excessive. Without wishing to burden you today with figures, I must point out that the cost of 1,204 rupees per kilowatt includes the construction of 4,140 miles of high-tension lines, as well as 1,600 sub-stations. This figure cannot usefully be contrasted with the cost of concentrated power systems such as Cawnpore and Calcutta. Again, the average all-in cost of eight pies (or two-thirds of a penny) per unit delivered at scattered points over thousands of miles of agricultural country (where the principal demand for irrigation pumping operates for a period of only one-third of the year) cannot fairly be compared with the figure of a quarter of an anna per unit which is commercially possible in concentrated industrial areas. One might as well compare the cost of coal at the pit's mouth with coal delivered in house kitchens! On the other hand, in financial justification of the project it can be stated that the capital cost of Rs 348 lakhs, or roughly three million sterling, has already ceased to be a dead charge on the Province as a nett return of some four lakhs was forthcoming last year after meeting interest, depreciation and working expenses—a figure which is increasing yearly as the load develops.

Turning for a moment to the separate finance of the less mature tube-well scheme, the return has naturally not yet proved so favourable. The capital cost of some 1,500 tube-wells, with their equipments, buildings and approach roads, is roughly Rs 135

lakhs, or, say, £700 each tube-well having a yield of 30,000 gallons of water per hour. The gross return depends on the local yearly demand for water, because this commodity is sold by the *quantity actually consumed*, not by the acre irrigated, as on our Gravity Canals. So far the return has not come up to our expectations. The main reason for this delay is inherent in any system of volumetric sale. We happened to strike a wet cycle of years in which to launch the project which, by temporarily reducing the demand for water, has delayed for a period the full financial yield on the capital.

But let us look beyond at another side of the picture. The cultivator can raise his crops at less cost on such a system in a wet year and thus save money for a dry year, when the tube-wells will serve as a vast insurance scheme against crop failure. In fact, the volumetric system of sale is a desideratum long sought after by irrigation engineers throughout the world. It has been attained after much thought and research on the United Provinces tube-wells, and I would like, as one of the founders of the enterprise, to take this opportunity of respectfully recommending the local Government to consider seriously before they change the procedure to one of "acre-rate" sale. Why not defer the decision until the present cycle of wet years has given place to a period of more normal rainfall?

In assessing the utility and gauging the financial return of these great projects, I would venture to suggest to the Governments concerned that the "long view" should invariably be taken. If I may use a simple parallel, I will quote the words of one of our great air pilots from whom I was fortunate enough to take flying lessons recently. "Straight and level, sir," his voice came through the headphones, "keep your eyes on the horizon and not so much on the instruments." I thought then, as our 'plane droned its way over the green fields of Kent, how truly this remark applied to the political navigation of modern India.

RELIEF OF UNEMPLOYMENT

The direct contribution which the existing hydro-electric and tube-well schemes have so far rendered towards the relief of

educated unemployment is Rs. 12 lakhs annually as the salaries of engineers, subordinates, clerks and operators in the service of Government alone. In addition there is the large number of engineers, mechanics and labourers employed by distributing licensees and contractors.

Should the new projects materialize this sum will rise to a higher figure. But this is not all. Imagine the scope for indirect employment which such schemes offer. The transport and marketing of the produce grown, the increasing industrial activity in the towns, the litigation and conveyancing—all these must mean more work for our educated youth. Let them not, however, overlook the other side, but recall what was written years ago: "He who causes two blades of grass to grow where only one grew before deserves well of his country." The projects I have outlined today are capable of raising many million tons of crops, often, too, in places where at present even grass dare not raise its head. By placing these beneficial activities outside the range of party politics I appeal to all concerned to unite the Provinces in objective and deed as well as in name in order to bring the great natural resources of power and water to the early relief of an expectant countryside.

THE TRAINING OF INDIAN ENGINEERS

I have dwelt at some length on the possibilities for employment of our Indian youth which the State holds out through these great electrical irrigation projects. We should, however, bear in mind the reciprocal obligation which devolves on parents in the matter of efficient technical training, to fit our young engineers to hold these responsible posts in the future. The Western engineering world, realizing by long experience the necessity of practical training, has always insisted on a prolonged workshop course. The Indian engineer is rather apt to think he can slip into a job after taking a college diploma and serving for a year or even less in, say, a sugar factory! Is the West wrong, and is young India really right? The answer to this question may be furnished sooner than we think by the operation of the thousands of machines and scattered irrigation pumps on which millions of cultivators now depend for their livelihood in the United Provinces. The culti-

vators of the vast electrified area whose tiny capital, often borrowed at that, has been invested, on our advice, in plant, seed and manure will themselves be the judges of the operating efficiency of the staff. Irrigation energized by a widespread electrical network will not be slow in reflecting any falling off in the standard of maintenance now exhibited. In a gravity canal with its slow-moving water there is a time lag between an accident on the main system and its effect on the villager. In electrical operation the effect of a power breakdown, in the stations or on the lines, is instantaneous, universal and calamitous. There is thus the possibility of latent disaster lurking in the hot winds of June in the system of "better living" now being offered to the people of the Ganges grid area.

In other words, the promoters of these schemes will not be judged so much by the plant they have installed and the prospects of greater prosperity that have been held out as by the future operating standard which the engineers maintain on these far-flung power systems. The importance of good service is so essential that I shall quote, if I may, a warning once recorded by Lord Tennyson against the danger of neglect of British naval maintenance by the Administration of the day

"Should you who have the ordering of the Fleet
At any time encompass her disgrace
Whilst all men starve, the wild mob's million feet
Will kick you from your place,
But then too late, too late!"

The comparison is clear. The hydro-electric "fleet" of more than 2,000 pumps ensures the wheat supplies of millions of people in the west United Provinces just as the ships of England safeguard the nation's food. A most creditable standard has been maintained hitherto, let us hope the engineers of the future will continue to see to it that the trust imposed in them is not betrayed.

BIHAR AND THE CENTRAL PROVINCES

Certain projects are under examination in Bihar and the Central Provinces, where both Governments are desirous of extending the benefits of cheap power to as wide an area as is economically feasible.

In Behar there is not the same intensity of irrigation demand as prevails in the west of the United Provinces, owing to the more humid climatic conditions. Demand for electric irrigation does, however, exist in certain localities, and this, combined with industrial demands in various large towns, constitutes the basic load for a steam-operated grid scheme embracing Patna, Jamalpur, Monghyr, Gaya and portions of the intervening country.

In the Central Provinces, due to the almost entire absence of any flow of underground spring water and the intermittent nature of the surface rivers, there is little scope for electric irrigation as a basic load justifying the construction of a rural network. A project is, however, under close scrutiny which, if found feasible, would provide a source of cheaper power for the towns of Nagpur, Wardha, Hinganghat and intermediate larger villages.

In both Behar and the Central Provinces, a preliminary investigation of power production costs indicates that, in the first instance, until a matured demand has been created by the evolution of larger industries, the cheapest source of power is a series of connected steam-driven stations suitably located in relation to the coalfields and the zones of demand.

The Central Provinces, as well as Behar, have important mineral—especially bauxite—areas which are capable of wider exploitation if a cheaper source of power can be made available either from the coalfields in the south or the Vindhya hills in the north (and east), or from a well-planned combination of both sources. Both Provinces, like much of the rest of India, have also a latent means of utilization in cottage industries, on Japanese lines, provided always that power is forthcoming at an economic rate.

The subject of cheap power has so far been examined mainly from the point of view of the people of India. The presence of a number of my soldier friends and some industrial organizers here today suggests a reference to the strategic viewpoint. India, to my mind, offers an important field for the manufacture of munitions, especially aeroplanes. Certain essential requisites for this industry are all forthcoming in Central India: huge bauxite areas for aluminium, cheap power for continuous processes, cheap labour and land, as well as immunity from air

attack. I would like to bring this aspect of the subject to the notice of the British Government departments concerned.

There is one important factor common to the power situation in all three Provinces—Behar, the United Provinces and the Central Provinces—namely, the water resources of the neighbouring State of Rewa. If demands from the south-east corner of the United Provinces, the north of the Central Provinces and the south-west of Behar can be adequately co-ordinated, a case can indubitably be made out for power development on a highly economical scale from the Vindhya hills for the benefit of all. It is estimated that, provided suitable markets exist, a total output of 75,000 kilowatts can be developed in the Tons river valley alone by the construction of storage reservoirs to impound the monsoon run-off from these hills. It seems probable that the most economical treatment for these areas will be firstly to build up a suitable load and load factor by means of steam stations at low capital cost and, later, when the load factor reaches a value sufficient to justify the additional outlay, to construct reservoirs, impound water and eventually replace steam by hydro power. Recent experience on the Ganges grid has shown that a judicious combination of steam and hydro generation is economical in reducing the capital charges involved in the construction of long transmission lines to distant areas. The attention of all those Governments is earnestly invited to the necessity for a co-ordinated review of these possibilities in the true interests of the adjacent populations whose needs are great.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the Association was held at the Caxton Hall, Westminster, S W 1, on Tuesday, July 19, 1938, when a paper entitled "Some Aspects of Cheap Power Development under the New Constitution in India" was read by Sir William Stampe, C I E. Lieut.-Colonel A. J. Muirhead, M C., M.P. (Under-Secretary of State for India), was in the Chair.

The CHAIRMAN Ladies and Gentlemen,—The first duty of a Chairman is to introduce the lecturer, but on this occasion I am in a rather anomalous position, because whilst the lecturer must surely need very little introduction to you, I feel that I need a great deal. Although during two months at the India Office I have been fortunate enough to make a large number of very pleasant contacts, I am afraid my practical acquaintance with India and its problems must be held to be very slight indeed, whereas your lecturer has spent a lifetime in the service of India, more particularly in the service of the United Provinces, and both he himself and his exploits must need a very small introduction, if indeed any introduction at all, to an Indian audience.

I have noticed that the last few lectures you have had have been on the whole on abstract subjects—education, literature, and political associations both internal and external. Therefore, to preserve the balance, it is fortunate today that we are going to have a lecture on definitely material problems, those material problems which are at the present moment of such tremendous importance to India. We are doubly fortunate in having as our lecturer today somebody who in the realm of engineering has done great practical things himself. His ambitions are, I believe, unbounded, for having spent most of his life in delving into the bowels of the earth, he is now, I understand, exploring the realms of the upper air, and if he has not got a pilot's A license already, I believe that is a matter only of days. He is indeed going to be master of all the elements.

With those few words I will introduce him.

(Sir WILLIAM STAMPE then read his paper.)

Lord LAMINGTON I am speaking now as I am going to another meeting. First of all, I wish to thank Sir William Stampe on behalf of the Association for his most interesting paper. He has added greatly to my stock of information as to the development of industries by mechanical means, and especially how agriculture is being assisted by electricity in India. Then I think it is especially important at the present time, as many people believe that adjustments of that character cause unemployment, that this paper shows the reverse to be the case. In these days, when migration and overseas questions are discussed, one generally is told that any influx of a fresh population will cause unemployment, and I think this lecture ought to help to get rid of that false idea.

After all, as he mentioned about this country, in the last hundred years or

so extraordinary developments and changes have taken place. The spinning jenny displaced labour temporarily, but in the end nobody could suggest for a moment that such inventions have not added to the number of the population and to their better employment in life and the general prosperity of the country. There is no denying it. This paper seems to me extraordinarily valuable in proving this fact. Sir William mentions one particular instance where men, formerly occupied in water-lifting, have now been absorbed into more profitable forms of employment, and so too the cattle that were worked. That is a concrete illustration of the way in which these changes do not impair the welfare of the people, but add to their comfort and prosperity.

Even in the case of the educated youths, they have been encouraged in the past to go in for university education regardless of how they were to utilize it afterwards. They have thus become discontented and often seditious. Sir William mentions that they can now find employment as overseers, clerks and engineers. All this knowledge tends to the welfare of the country, despite temporary dislocation brought about by changes in method.

I should like again to thank Sir William Stampe for his very instructive and informing paper, and also Colonel Muirhead for his kindness in leaving the House of Commons for a short time to preside on this occasion (Applause)

SIR EDWARD BLUNT (late Member of the Executive Council of the Governor, United Provinces) said: During the three years before I left India in 1935, irrigation was one of the departments under my charge, and one of my most important duties was to listen to Sir William Stampe discoursing on the hydro-electric system of the United Provinces, or "hydel," as we called it for short. This is by no means the first time that I have had to speak in support of him, and as I sat listening I began, like Sir Bedivere, to revolve many memories, mostly pleasant ones. There are many things which I should like to say, but as my time allotted is short, I shall deal with only two or three points.

The first of them is water. Of all the Indian peasant's needs, water is the greatest. In some tracts, it is true, the rainfall gives him all, or nearly all, that he wants—for instance, in Southern Madras and in Southern Bombay, which get the north-east as well as the north-west monsoon, and in the black cotton country, where the soil holds water like a sponge. But in most parts the rainfall must be supplemented by artificial irrigation, and it is almost impossible to have too much of it. I want you now to consider how much additional water has been made available in the hydel area by the new electric power. There are some 1,800 tube-wells, including those which belong to private owners. We may take the average discharge of these wells at $1\frac{1}{2}$ cusecs, which is, in fact, the size of most of them. One and a half cusecs means $9\frac{1}{2}$ gallons per second. They run, as Sir William has told you, for some 3,000 hours a year. Accordingly, the additional water supplied to the hydel area by these tube-wells is no less than 189,000 million gallons per year. Nor is that all. The engineers have managed to increase the amount of water available in their canals to the extent of another 600 cusecs, partly

either replacing distributaries by tube-wells, or by building tube-wells along the canal bank, which discharge into them, and also by three pumping schemes from streams which flow at too low a level to be tapped for gravity canals. The pumps in these schemes are also driven by electricity. These schemes give another 41,000 million gallons. In other words, hydel has increased the water supply of ten districts, an area, I suppose, of some 17,500 square miles, by over 230,000 million gallons.

My next point is the great benefit done to the cultivator by substituting cheap mechanical power for the man and bullock power which he at present uses. The Indian peasant has been using all the principal sources of irrigation for centuries. There are inundation canals on the Indus which go back to the early Muhammadan period between the eleventh and thirteenth centuries. There are channels now forming part of the present Western Jumna Canal system, which were originally built by a Tughlaq king of Delhi in the fourteenth century. In the Chingleput district of Madras a couple of huge reservoirs are still in use which were originally built by a Chola king in the eleventh century. As for the village tanks and wells, they have been used from time immemorial. But the Indian cultivator's methods of extracting water from these various sources are all laborious, and expensive, and slow. I need say nothing about the laboriousness, for most of this audience must have seen at work both the water basket or *bhonka*, by which water is lifted out of one pool into another some ten or twelve feet higher, and also the bullock run. For the expense I need only quote an estimate by an agricultural expert which I recently saw, to the effect that irrigation which would cost Rs. 10 per acre from a canal, and Rs. 15 per acre from a tube-well, would cost Rs. 25 per acre from an open well worked by bullock-power. For the slowness the same expert said that the maximum discharge of water from an open well by the use of two bullocks would not exceed 1,500 gallons per hour. But the discharge of 1½ cusec tube-well amounts to 35,100 gallons per hour. This electric power, moreover, can be used for cutting chaff, which in the ordinary way the peasant does by hand, or for crushing cane, which in the ordinary way the peasant does by driving two bullocks in a small circle round the *kolhu*, a crusher made of stone. In short, Sir William and his men have substituted a cheap and imperishable power for the expensive and perishable power which the peasant at present uses, and which incidentally he requires in other directions.

The existence of this cheap power is also of immense advantage in its connection with industry. At the present moment the Indian population is growing with great rapidity. The increase during the ten years 1921-1931 was 10 per cent., and looks like being larger still during the ten years 1931-1941. The result is that in many parts of India the pressure of the population on the soil has become unbearable, and already agriculture is becoming unable to find employment for all the multitude which naturally depend on it. One of the means of curing this evil is emigration from agriculture to other industries. But the Indian peasant loves his home and his fields, and it is only under the greatest economic stress that he is willing to leave them. On the other hand, industry has a habit of becoming concentrated in the neighbourhood either of cheap power or of its raw materials.

Of these the first is always available in the hydel area, and in the case of some factories, notably sugar factories, also the raw materials. The result is that the hydel area is attracting, and will certainly continue to attract, industry to its own neighbourhood, and that will greatly reduce the peasant's reluctance to make the change from agriculture to industry, since the latter in the hydel area will be within reach of his own home—all the more so that the motor-bus and the bicycle serve to reduce the distance between the village and the factory.

Sir William claims that hydel is an important factor in rural development. I think he is justified in his claim. By bringing cheap water to the peasant, he is enabling him to grow more and better crops, and putting more money in his pocket. He is supplying him with cheap power for cultivating and processing his crops, and thereby reducing his expenses. At the tube-wells he is giving him pure drinking water and sanitary arrangements for bathing, and thereby improving his health. And there are other by-paths of rural development too numerous to mention, which Sir William has also explored.

Another point on which I should like to make a few remarks is this. Sir William has emphasized the necessity of maintaining present operative standards in hydel, and pointed out by an apt quotation the probable results of allowing them to deteriorate. May I remind him that if such a situation should arise, there is one voice which will make itself heard which he has not mentioned—namely, the voice of the cultivator himself. He knows the value both of water and of *buzis*. He has got them now, and if in future he is deprived of them—whether from neglect or from any other cause—he is not going to take the loss quietly. He is no longer apathetic, and unsophisticated and submissive as he was before the War. The War itself and the reforms have taught him a great deal. He now knows what he wants, and he means to get it—as he has already shown in other directions. Personally, I can think of no better method of losing his confidence—and with it his vote—than failure to keep hydel up to its present standard.

I should like to end with a few words of a more personal kind, and to tell you something about Sir William and his men. They are a wonderful lot. They are ready to take on any job of work whatever it may be, and to carry it through. If they do not know how, then one of them, often Sir William himself, goes to California, or Sweden, or England, or wherever that particular job is done by experts. There he learns how to do it, goes back, and shows the rest of them, and then they get on with the job. When hydel was first started in 1928, not one of them knew anything about electricity. Most of them, if not all, know about it now. On one occasion they built a large bridge over the Hindan for a district board, and on another occasion they built a steam tramway for themselves. Why? To make it easier to move the crops grown by the help of their own tube-wells. And they did these jobs in their spare time. As for Sir William himself, let me describe his ordinary working day. He gets up about five, and some unhappy stenographer has to get up too. From breakfast till dinner-time he is out on whatever works there may be in the neighbourhood, and thinks nothing of travelling 100 miles in this time. About ten o'clock he goes back to his desk with another stenographer till midnight. Incidentally, I have seen him

fall asleep at dinner with his head in his plate. He was, and I imagine still is, as full of energy as one of his own high-tension wires. There is nothing in my service that I remember with greater pleasure than that for a time, whilst I was in charge of irrigation, I was practically one of them

SIR JOSEPH CLAY (late Member of the Executive Council of the Governor of the United Provinces) I should like to add a few words of appreciation to Sir William Stampe for the very illuminating and imaginative paper which he has read to us this afternoon. I use the word *imaginative* with reference to his own remark about his future projects which he described as, in the opinion of some, "fantastic and perhaps unwarranted." And yet what could have seemed twenty years ago more fantastic to many officials in India, even to experts in irrigation, than the scheme of the Ganges hydro-electric project which has recently been brought into full operation? Had anyone been told then that water sufficient to equal in volume nearly one-half of the cold-weather flow of the Ganges Canal could be extracted from the subsoil, he would have replied that such a result was impossible and yet we see this an accomplished fact today.

Sir William, with characteristic modesty, has said nothing about his own personal share in bringing about this very remarkable result. He would not, I know, claim to be the originator of the idea of harnessing the falls on the Upper Ganges Canal. But the conversion of the latent power there developed by falling water into a gigantic scheme for benefiting a large part of the western half of the United Provinces is almost entirely his own work, and in developing this scheme he had to meet a great deal of opposition at the start.

First of all, the technical critics were inclined, first to pooh-pooh, and secondly to oppose the scheme. They said, "If you sink all these tube-wells and they really work, you will dry up the sources of the Lower Ganges Canal." Then he had to contend with the local Legislature, which said, "We are not prepared to vote you these hundreds of lakhs of rupees unless we are certain you will succeed." Thirdly, and perhaps most formidable of all, he had to meet the scepticism and at first the opposition of the Governor, Lord Hailey, who distrusted the financial calculations and feared that so much delicate electrical machinery would be very difficult to maintain in proper condition. All these three obstacles were met and overcome by Sir William.

He satisfied his technical critics in various ways, though I am not sure that all of them are fully convinced even now that his scheme would work without doing more harm than good. He converted the members of the Legislature by giving them joy-rides through the first developed tube-well tracts, by his eloquence in the Council and by other methods, into becoming, instead of embittered critics, his enthusiastic supporters. Finally, and most important, he converted Lord Hailey himself from being a sceptical opponent to a convinced adherent of his scheme. I am not at all sure whether that achievement was not really a greater one than the evolution, planning and construction of the Ganges hydro-electric grid itself.

I have no doubt that the Governors, the local Councils and the Finance

Members who assisted in carrying this scheme to completion were well-advised to take advantage of Sir William Stampe's burning enthusiasm, unbounded energy and technical skill and to assist him to apply his powers and resourceful energy to increasing the electrical amenities of so large a part of the United Provinces. A man of his calibre is not thrown up in every generation of engineers, least of all in a Government Department, and we may account ourselves fortunate in Northern India to have had him with us for the full period of his service.

Sir William hopes after no long interval to see these schemes of his extended and progressing over a larger area than they have hitherto been restricted to. He has alluded this afternoon to a promising scheme in which the Mirzapur district and the State of Rewa are involved. But he has stressed, and rightly stressed, one of the great difficulties which confronts the originators of all large electrical schemes—namely, the building up at an early stage of an electrical load sufficient to produce enough revenue to meet, first, the cost of maintenance and running charges, and, secondly, to defray the capital charges which have to be incurred by all such schemes from their commencement.

The very real difficulty which this problem presents is well illustrated by the Mandi scheme in the Punjab, which is still unable, I believe, to dispose of by any means the whole of those 36,000 kilowatts of energy generated miles away in the heart of the Himalayas, although fourteen years have passed since the scheme was set on foot and five since it was completed. During most of this time interest charges have been piling up to the inconvenience, I fear, of the Punjab finances. This is the reason why they are now trying to sell a considerable part of that energy to the Province of Delhi.

Sir William had recourse to two methods for surmounting these difficulties. First he came to the conclusion that in the greater part of Northern India, the one really big electrical load which can be confidently reckoned on is the provision of power for pumping water for irrigation purposes. As Sir Edward Blunt has remarked, the Indian cultivator's first demand is for water, his second for more water, and his third for still more water. One can therefore generally hope to sell power for pumping water, provided it be cheap enough. His other method of getting over the difficulty of meeting capital charges was to proceed on the instalment system, a system which is not always possible. But where it is possible, it is an exceedingly valuable method.

I am afraid that, despite his ingenuity, it is not likely that any of these big schemes will be taken up in the near future, and thus for two reasons. First, Sir William is no longer the Chief Engineer on the spot to press forward his projects and to "energize" his Minister. Secondly, all the Ministries in the Provinces of India today are so deeply committed to expensive projects of more universal application and appeal than the provision of irrigation and industrial conveniences to some only of the districts of their Provinces, to be ready to take up his new electrical schemes for some time to come.

Nor is a delay of some years to be seriously objected to. It may even be of value. A pause of this kind will give an opportunity for Sir William's great

project to be "run in" and thoroughly developed before other similar projects are embarked upon.

Sir William had some wise words of warning to give us today on the very important matter of maintenance. It needs no words of mine to stress the risks that will be run if through inexperience, carelessness or slack maintenance or—a more subtle form of decline—weakness in supervising the operating staff, inefficiency is allowed to creep into the structure of the hydro-electric grid.

We have had in the recent past instances which have fully justified Lord Hailey's apprehensions, and it is not yet possible to say—I wish it were—that such possibilities can be relegated to the limbo of forgotten things. On a number of occasions municipal water-works have either completely broken down, or have only been saved from such a fate at the last moment, owing to the slackness of the administration or its failure to provide an adequate supply of essential spare parts. If anything of that kind occurred in the hydro-electric grid in the United Provinces, very serious results would undoubtedly occur. And though, as Sir Edward Blunt remarked, the Ministry responsible would no doubt feel the displeasure of the electorate at the next election, that would not give them their electric energy or the water it ought to have pumped during the weeks or months for which they had been deprived of it. It is for this reason I suggest that a short pause in which experience may be gained of the working of the scheme may not be altogether unbeneficial at this stage. One cannot but view with some apprehension the act of his own Government when Sir William Stampe retired last October. They seized the occasion to abolish the post of third Chief Irrigation Engineer. This officer was in charge of the whole hydro-electric scheme and all electrical development in the Province. The Ministry was sufficiently optimistic to impose this additional burden on one of the other two Chief Engineers, who was already fully occupied with the charge of the immense and complicated system of the Ganges and Jamna Canals. It was to actions of this kind that Sir William no doubt referred when he made that quotation from a late Poet Laureate.

But whether or not we have early progress made in further electrical development, I have little doubt that the day will come when the minds of engineers searching for fresh power will turn towards the resources available in the rivers flowing down from the northern barrier of Hindustan. As one who has spent at one time the greater part of seven years wandering up and down the Upper Valley of the Ganges in his Himalayan home, I cordially endorse everything Sir William has said about the great difficulties—constructional, mechanical, political, and of other kinds—which will beset the development of any great power scheme in the Himalayas. But if those difficulties can be overcome, then I am sure that some day there will be set free a very much larger supply of cheap power for the development of industry and irrigation in Northern India than is available today, though I believe that the greater part of that power will be devoted to the provision of water for irrigation, the great need of the Indian cultivator.

If that day comes, then indeed will be fulfilled the words of the prophet, "The wilderness and the solitary place shall be glad for them, the desert

shall rejoice, and blossom as the rose For in the wilderness shall waters break out, and streams in the desert."

Mr A. YUSUF ALI I would express my deep appreciation of the admirable paper that has been read to us by Sir William Stampe, and also of the two important speeches that followed from Sir Edward Blunt and Sir Joseph Clay

I wish to devote the few minutes I have to one single point, and that is the possible danger that was suggested for the future by, I think, all the three speakers The remedy against the occurrence of such a danger relates itself to education

Latterly there has been some but not sufficient attention devoted to practical education In the Punjab University and in the Aligarh University, two universities with which I am intimately acquainted, there has been, I think, a slight movement of students away from the purely literary paths to the paths of scientific research. What I should like to see, however, is the diversion of the lower branches of students to these practical subjects

It is perfectly clear that if the higher university examinations stimulated practical scientific research, we should ultimately reach the goal of a better organized economic and irrigation system But research and practical application are two different things Nor can a few university students affect the mass of practical workers Until we get the students in the middle schools, in the high schools and in the intermediate colleges to turn to practical subjects, to engineering, to chemistry, to hydraulics, and to all the different practical sciences which feed, as it were, the economic life of the nation—until we do that, we shall be in real and constant danger of letting down the splendid development schemes, such as have been described to us today

I am therefore for linking both these questions and the political questions with the need for the very best practical education that we can get In this matter I have always urged, and I should like to urge again, that the Governments, the Legislative Councils, the Department of Education, and also the Engineering and Public Works Departments should give that push which alone can help in saving India from a somewhat barren future, such as we might have if political controversy alone rules the atmosphere

Sir ARNOLD MUSTO May I add my meed of thanks and congratulation to Sir William Stampe for his very thoughtful and interesting paper, which I am sure we have all enjoyed very much There are just one or two points I should like to mention

I was very interested to hear that there is a high-level pumped canal already in existence, and that others are proposed—that is to say, a canal supplied by pumping from a lower-level canal I was not aware that there were any in India at present. They are, of course, common in Egypt. I proposed one myself in 1920 as a part of the right bank canal system of the Sukkur barrage canals It was not carried out. I notice also that that particular plant is supplied by a steam power plant, and all the references in the paper to power plants are to steam plants (other than hydro-electric) I wonder why the Diesel is never considered for smaller units? If the units are for 2,000 kilowatts or over, steam is probably the cheapest. There

may possibly be local reasons that indicate steam. It may be near coal-fields I do not know.

Another point that interested me was the remark about the necessity for maintaining these works thoroughly. I think Sir William touched on the vitals of the question when he contrasted the Western system of training engineers in commercial workshops with the academic training given at colleges in India. As long ago as 1910 I had the honour to write a note for the Governor of Bombay, afterwards Lord Sydenham, on this question of training. The solution of it then, and I believe still, is the establishment by legislation of a legal system of apprenticeship, a binding system of apprenticeship.

In my time, when I was dealing with mechanical matters in India, I was constantly up against the difficulty of finding good mechanics, and I appealed to the people I considered most likely to offer me mechanics, not the Government colleges, but the workshops that exist in Bombay and various places. The reply I got from them all was the same, "We cannot train engineers for the simple reason that we cannot hold the boys." What happened was that a boy came to them to learn his trade, stayed for six months or so, receiving a very small stipend, as apprentices do in this country. I myself started at five shillings a week, having paid for it beforehand in a premium. But having got their small stipend, they stayed for six months or so, then they went round the corner to a small Indian firm or the village blacksmith, who would give them three or four rupees a month more. They then called themselves qualified engineers. During the six months or so they stopped with their original employer they did more harm than good. They damaged the machinery and wasted materials—all apprentices do. An apprentice is no use to his employer until he has been there a year or two. That is the great difficulty, or was the great difficulty, in India in training engineers.

I am afraid I was heretic enough never to be in favour of college training of engineers. By college training I mean college workshops. The essence of mechanical training is the commercial sense, the value of time and material. In a college workshop, however well-equipped it may be, it does not matter how long a lad takes to do a particular task as long as he does it nicely in the end. If he is told to cut a screw, it does not matter how long he takes over it, so long as he turns out a nice screw. He can spoil twenty pieces of steel in doing it, but as long as it is a nice screw when it is presented to the examiners, it is accepted.

In practice, of course, he cannot do that. When he goes out in the world, he cannot take all this time over a job. If he has not learnt to do it *well* in reasonable time at his college, or wherever he has trained, then on the spot he does it badly. He cannot spend unlimited time on the job or his employer will dismiss him for dilatoriness. Before his bad work is discovered much damage may be done to the plant.

May I give two extreme examples that illustrate the position? When I was Mechanical Engineer to Government, I had a letter from a wealthy zemindar who owned a pumping plant, and whose son had taken an engineering degree at one of the colleges in Bombay. He had been advised as to the purchase of a plant, which, as a matter of fact, was not too bad, and he had

very sensibly had it set up by the engineers who supplied it. It worked very well for six months or so. At the end of that time it began to give trouble. The son, who had learnt "all about" oil engines in the college workshops, immediately began to adjust it. After a little of his adjustment it ceased to function finally. However, he continued for two months or so, during which time his father's sugar-cane crop died. Then his father thought it was time he came to me. I went down to the place to see it. The son explained all about it. I told him I would like to have a look at the engine. After an hour of my readjustment it would still not work. I suspected the possible cause of trouble, examined the oil fuel pump, and found it was clogged up with dirt. We took it off and cleaned it, and the engine worked properly. They had never taught him at the college workshop that the machinery must be kept clean.

Another example was a young man who had had a smattering of college education, and advised another cultivator about the pumping plant he required. He bought a pump. The local village blacksmith erected this pump and the piping quite well on the river-bank. After it had been there a few weeks, the cultivator was disappointed to find he got no water from it. A few weeks after, I passed through the village and had a look at it, and was surprised to find there was no engine to work it! (Laughter)

These, I admit, were extreme cases, but it shows what is possible. I think the solution of many of these difficulties is a proper system of apprenticeship for training lads in commercial workshops, not in colleges. You have the right atmosphere there and the right experience.

There is one other reform not mentioned in the paper which I would like to suggest. I believe it would be a very great advantage if technical evening classes were opened in India for the technical education of mechanics. There are thousands of mechanics in India who are quite good men with their hands and can do a job very well, but their usefulness is very much limited by the fact that they cannot even read a plan. If they could go to evening classes when their work is finished, where they could be taught a smattering of machine drawing and some elementary theory of mechanics so that they could understand plans, I believe it would be a very great help. All instruction could be given in the vernacular.

The CHAIRMAN. For my part I should like to say how very enjoyable and instructive I thought both the admirable lecture of Sir William Stampe and also the discussion which has followed. I have got, as a matter of fact, a certain family interest in water and its uses, because my great-great-grandfather, Matthew Boulton, who was a very celebrated Birmingham industrialist in the eighteenth century, used to have his then very up-to-date factory worked by the direct application of water power, and it is rather interesting that even after the steam engine was introduced and he had installed one at his works, it was not used for the direct working of the machinery, but in order to pump up the rather exiguous supply of water which had gone over the wheel, in order to go over the wheel again. The motion of the steam engine in those days was rather rough and jerky, and he preferred the smoother working which the water-wheel gave him. Of

course, the extension of water power to hydro-electric schemes is a great advance in convenience and efficiency. I hope Sir William Stampe will realize that he touched in me a personal family chord.

There were two things which struck me about his lecture in particular. One was the point emphasized by Lord Lamington the necessity of constantly instilling into people's minds the fact that this development of power does not in the long run mean the displacement of human labour and the causing of unemployment, but very much the reverse. That indeed is proved beyond all doubt by the fact that at the present time in this country we have, after a century or more of tremendous scientific and technical development, more people in actual employment than ever before in the history of the country. But still I think it wants stating and re-stating because people are apt to think that, although it may have worked in one country or for one section of industry, in some sort of way it is not going to apply to their country or to their section of industry. Therefore I think it wants re-stating that as far as human experience has so far gone, the extension of power with all that it brings does in the end mean more employment and more happiness and a better standard of life for the human race.

The second point which struck me about the lecture was this, the way in which Sir William Stampe kept impressing upon us that water power and all that it means is not an end in itself, but a means to an end. I cannot help thinking that it must be a temptation for anybody like Sir William, with his great engineering knowledge and capacity, to be obsessed with the technical problems and to feel that when he has done something in the way of harnessing water-power, when he has, so to speak, conducted a great engineering achievement, that that in itself is something. It must be a temptation to all engineers to feel that. But Sir William kept telling us in his lecture the numerous uses to which that water-power was being put and would be put in years to come. He talked, for instance, not merely about the rather obvious adaptation of water-power to factories, but also indicated the strategic aspect of the question of manufacturing for defence purposes. He led us into the realms of village amenities and cottage industries. He talked about the possibility of utilizing it indirectly for the growing of fuel. By that means we were led on to the replacement of cow-dung as domestic fuel and also extensions into the field of fertilizers. I am sure that the vision of the uses to which water-power, properly adapted, may be put must have sustained Sir William on many occasions in the difficulties which these enormous engineering projects inevitably bring.

A general, under whom I once served, put in my report, "Always learning." I must say since then I have tried to live up to what I considered to be a compliment. I can only thank Sir William Stampe and indeed the speakers who have taken part in the discussion for helping me very much in that process of learning about a most interesting development of Indian life.

SIR WILLIAM STAMPE. I am afraid there is little time left now to reply at length, nor do I think the various comments call for a detailed technical reply from me.

I would like to say, however, how much I personally appreciate the kind remarks, I am afraid the over-generous remarks, which have been made about me, but I can accept them more readily when I know they are meant to include the very loyal and efficient staff, both British and Indian, which I have had the honour to command during my term of office during the conception and construction of these projects.

In reply to Sir Edward Blunt and Sir Joseph Clay, I would say that the appreciative remarks they made about me are apt to recoil on the givers of such praise. It was largely due to the support given us by Sir George Lambert, and later by Sir Edward Blunt and Sir Joseph Clay, their constant help in piloting these schemes through, and their willingness to accept the financial responsibility for these projects, that we were able to complete them. So what they have said about me is really reflected on themselves. I would also like to acknowledge the help and advice given to me by Sir Harry Haig, the present Governor, and Lord Hailey, his predecessor, who took the keenest interest in these enterprises. The Legislative Council also gave us their support.

I do not think that any detailed technical replies to the discussion are called for. I should, however, perhaps explain that the high-level canal in the Meerut district, to which I referred in the early part of the lecture, is operated by electrically driven pumps fed by the Ganges grid, not worked by Diesel engines. Various projects are still being examined for converting "lift" irrigation into "flow" irrigation by means of such pumps, and there is considerable scope for these beneficial operations.

The eastern electrical projects at Fyzabad and Chandausi are operated by steam because hydro power is too remote and Diesel engines are too expensive in maintenance for the type of load being served. We considered Diesel engines—and, indeed, installed them as "stand-by" plants—in the early days of the Ganges grid, but their operating expenses are too high to enable them to compete with either steam or hydro power for continuous operations such as irrigation pumping.

In conclusion, I would again respectfully draw the attention of the various Indian Governments, who administer these and other schemes, to the necessity of maintaining an adequate and competent technical staff.

I thank you all for the patient way you have listened to my lecture, and you, sir, for taking the Chair.

SIR FRANK NOYCE WRITES

It was a matter of great regret to me that a long-standing engagement prevented my being present at Sir William Stampe's deeply interesting lecture. My regret is all the keener for two reasons. It was I who suggested to the Honorary Secretary that Sir William might be prevailed upon to give the Association an account of his great work in the United Provinces. And one of my last acts as Industries Member of the Government of India was, in Sir William's pleasant company, to take—in fact, not in imagination—the aeroplane journey over the electrified area which he describes in his paper. That journey enabled me very vividly to realize the beneficial changes he had wrought in the western districts of the United Provinces since I had

last made an extended tour through them with the Indian Sugar Committee in 1919. Incidentally I might mention that the Report of the Sugar Committee furnishes another illustration of the dangers of prophecy, for it regarded the prospects of utilizing electric power generated by the falls on the Upper Ganges Canal as of very minor importance compared with those of the scheme then under consideration for generating power from the falls on the Jumna near Kalsi.

There is general agreement that an increase in the prosperity of India can only be secured by a concerted, strenuous and sustained effort to raise the standard of living throughout the Indian countryside. Sir William's paper brings out in striking fashion the part that hydro-electric development is going to play in fulfilling that desideratum in both its agricultural and industrial aspects. It has already brought to the agriculturist over large tracts of country a security he has never yet known together with a greatly increased income. The fringe of its potentialities from the industrial point of view has hardly yet been touched. Rapid industrialization, as I have stressed on many other occasions, is not a panacea for all India's economic ills, but it would undoubtedly bring about a better balance of her economic life. I warmly endorse Sir William's view that the projecting and financing of large public works of cheap power development is of the first importance in ensuring that progress in industrialization is on sound lines. India has in its old-established industrial centres copied all too faithfully the evils of the West, but it is not too late to call a halt in that respect by directing the drift to the towns, which the rapid growth of her population makes inevitable, to new centres in healthy surroundings. And I am glad that Sir William has emphasized the extent to which hydro-electric development can help in mitigating the severity of the terrible problem of middle-class unemployment by keeping in the villages at least some of the army of educated young men who could do so much to make them happier and healthier places than they are now.

THE SEVENTY-FIRST ANNUAL REPORT OF THE EAST INDIA ASSOCIATION

FOR THE YEAR ENDING APRIL 30, 1938

THE Association entered upon the eighth decade of its existence a few days before the Coronation of their Majesties the King and Queen, and a month after the "appointed day" for the Provincial Autonomy provisions of the Government of India Act, 1935, to come into effect. Much uncertainty prevailed at the time whether the system would be fully established. In the six Provinces where they had been victorious at the general election the Congress leaders refused to take office without certain assurances from the Governors, which were held by the Secretary of State and the Viceroy to be incompatible with the obligations imposed upon the Governors by statute. After much discussion the impasse was overcome and in July the six Provinces followed the example of the five in which non-Congress coalitions existed in the establishment of Cabinets possessing the confidence of the respective Legislatures. The year was one of remarkable internal tranquillity, though the clouds of communal differences gathered here and there. Your Council took steps to keep the Association informed of the political situation, and valuable light was thrown thereon at many of our meetings. The general verdict was that the Constitution was working with a far greater measure of success than could have been anticipated from the troubled political history of India in recent years. The Association availed itself of every opportunity to promote both by exchange of views and by social contacts good general relations between Great Britain and India and received much encouragement in this effort.

THE CORONATION

In the memorable Coronation summer your Council linked its programme with Imperial events. On May 4 the High Commissioner for India kindly entertained the Association at India

House to hear an instructive paper on "India and Queen Victoria" by Dr Collin C Davies, Reader in Indian History, University of Oxford. The occasion was made the more memorable by the presence in the chair of H H the Maharaja Gackwar of Baroda, whose personal contacts with Her Majesty began on his first visit to Europe in 1887, and who in boyhood was in the assembly at Bombay which, in the winter of 1875, welcomed the Prince of Wales, afterwards King Edward VII, at the outset of his Indian tour. Miss Cornelia Sorabji also spoke from personal recollection of Queen Victoria.

The Association was the senior of the eight Empire Societies sharing the arrangements for the Empire Day and Coronation Banquet at Grosvenor House under the chairmanship of the Earl of Athlone. The guests numbered over 1,200 and the occasion was marked by the last public speeches of Earl Baldwin and Mr Chamberlain before respectively vacating and filling the office of Prime Minister. In the replies to the toast of the British Commonwealth, the Maharaja Gackwar of Baroda spoke as representing the Indian Empire, and described the new Constitution in India as a welcome step toward the attainment of her goal as a free and autonomous unit within the British Commonwealth.

A further social function of the Coronation summer was the Garden Party to meet the Prince and Princess of Berar given at "Great Fosters," Egham, on May 29 by Mr C G Hancock, proprietor of *Great Britain and the East*. The occasion was favoured by brilliant weather, and at the tea tables, under the chairmanship of Lord Hailey, the Right Hon Sir Akbar Hydari, who accompanied their Highnesses, briefly conveyed their thanks and his own. He spoke of the readiness which Hyderabad would always continue to show in playing the part of the friend and ally of the British Government. The Coronation was followed by the Imperial Conference, and the Council, in combination with the National Indian Association, gave a reception at Grosvenor House on June 11 to meet the representatives of India at the Conference. Sir Malcolm Seton presided, and the Maharaja Gackwar of Baroda and Sir M Zafrullah Khan, the two representatives from India, addressed a large assembly of guests.

THE POLITICAL SCENE

To the political situation in India in the first full year of Provincial Autonomy close attention was paid. Sir Phiroze Sethna, one of the leaders of the Indian Liberal Party, undertook to give a survey of the first three months of the new system, and to discuss the constitutional crisis arising from the refusal of office in the Provinces where the National Congress commanded legislative majorities. Sir Phiroze was recalled to Bombay on urgent business grounds, and on June 28 his paper was read by a kinsman, Mr. A. Shroff. Lord Dufferin, who presided over an animated discussion, shared the anticipation of Sir Phiroze Sethna, happily fulfilled, that the impasse would soon be overcome.

In the cold weather season Lord Lothian had a long tour in India after an absence from that country of six years. On March 8, within a few days of his return, he gave an encouraging account of his impressions of the working of Provincial Autonomy after it had been in full operation for some eight months. Certain constructive proposals of his Lordship on the subject of further stages of reform attracted widespread attention in the Press both here and in India. The presence in the chair of Lord Lamington was typical of the close and constant interest of the President in all aspects of the work of the Association.

HONOURING PUBLIC SERVANTS

The hearty goodwill of the Council to those on whom the responsibilities of administration rest was reflected in two farewell luncheons at the rooms of the Royal Empire Society. The first of these, given on July 21 to Sir Roger Lumley, then Governor-Designate of Bombay, had the co-operation of the Society of Yorkshiremen in London as well as of the Royal Empire Society. It was appropriately presided over by Lord Halifax, who spoke of India being in a state of transition, under which the point of view of those of British race connected with the administration was changing from that of power to that of influence.

The second luncheon was on November 4, when the Royal Empire Society and the Association entertained Lord and Lady

Brabourne, then on a brief visit to this country between leaving the Bombay and going out to the Bengal Governorship. The Secretary of State for India, speaking from the chair, alluded to his own abiding affection for the people of Bengal, and expressed his confidence that Lord and Lady Brabourne would identify themselves with the people of the Presidency in their political, economic and æsthetic interests. Lord Brabourne was able in his reply to give an encouraging account of the early months of the working of Provincial Autonomy in Bombay under a Congress Ministry.

While honour was done to those going out to take up heavy responsibilities, due regard was paid to the completion of successful labours. On January 10 Lady Bennett was the hostess at a reception to welcome Sir John Anderson on his return home after five and a half years' tenure of the uneasy throne of Bengal. Sir Samuel Hoare, the Home Secretary, who recommended Sir John's appointment in 1932, voiced the general feelings of appreciation of the great work he had achieved both in overcoming terrorism, largely by ameliorative measures, and in guiding the Presidency into what had so far been the smooth waters of Ministerial responsibility. This social occasion was made the more attractive by a coloured film display picturing a visit of Sir John to the closed and remote Himalayan kingdom of Bhutan. The film was made and described by Mr. John Davie, who was at the time A.D.C. to the Governor of Bengal.

LECTURES

The links the Association has always maintained with Burma have not been severed by the political separation of the country from British India. On February 8 Sir Arthur Page, late Chief Justice of Burma, gave a friendly and picturesque account of "Burma in Transition." Lord Zetland was in the chair, and thus made his first public appearance in his separate office as Secretary of State for Burma. The Council was also indebted to Lord Zetland for presiding at a meeting on November 16, when the veteran prince of explorers, Sir Aurel Stein, gave a lecture, illustrated by lantern views, on "Early Relations between India

and Iran." With due politeness, he turned a deaf ear to the kindly suggestion of his old friend Sir Michael O'Dwyer that at 75 he should call a halt and not go back again to the wilderness to endure the solitude and hardships of archaeological exploration.

A number of serious problems not directly political came under consideration. Educational matters, for instance, were twice discussed. On May 31 Mr. and Mrs. H. S. L. Polak entertained members to tea at the Rubens Hotel. Lord Lothian was in the chair, and the Right Hon. Sir Tej Bahadur Sapru spoke on a subject to which he has devoted close and fruitful attention for several years past—that of the large and growing extent of unemployment among the educated classes in India.

In essence the same problem, though with wider sweep, was discussed on December 8, when the lecturer was Mr. S. H. Wood, Director of Intelligence and Public Relations, Board of Education, London. In association with another expert from the Board, Mr. A. Abbott, he had been in India in the previous cold weather to report on vocational education in Delhi, the Punjab and the United Provinces. He now gave his general impressions of the Indian educational field, and the chair was appropriately taken by Sir Firozkhan Noon, the High Commissioner for India, who for some years was Education Member of the Punjab Government.

The great social problem of the rapid increase of India's population was presented in a paper prepared by Professor Radhakamal Mukerjee, of Lucknow University, and read on his behalf on July 13 by Mr. Alexander Farquharson, General Secretary of the Institute of Sociology, with Lord Goschen in the chair.

An external matter on which India feels strongly was submitted for consideration on April 11 by Mr. Edwin Haward, lately returned from some eight years' editorship of the *North China Daily News* at Shanghai, and having behind him many years of journalistic experience in India. With Sir John Anderson in the chair, he spoke comprehensively on "India and the Far Eastern Conflict," and a valuable discussion ensued.

The cultural side of Indian life and influence was not disregarded. His Excellency the Nepalese Minister was At Home to the Association and the India Society at the Legation on

October 6 Mr Percy Brown, Secretary and Curator of the Victoria Memorial Hall, Calcutta, illustrated with lantern views his address on "The Arts of Nepal" Once again Lord Zetland, whose interest in the cultural life of the East has been lifelong, was in the chair On October 19 Lady Willingdon kindly presided at an entertaining lecture by Mr. Hilton Brown—one of the few novelists the Indian Civil Service has produced, and well known as "H B" of *Punch*—on "South India in Present-day Fiction" His views were supplemented by those of a well-known literary critic and I C S colleague in South India, Mr Chartres Molony, and of a prolific Service author, Mr C A Kincaid

FINANCE

At the reception to meet representatives of India at the Imperial Conference, already mentioned, Sir Malcolm Seton had the gratification of announcing that the grant of £50 per annum made to the Association for hospitality purposes by the Maharaja Gaekwar of Baroda had been generously renewed for a further term of five years Subsequently His Highness the Maharaja Sindhia of Gwalior, whose illustrious father was a staunch friend of the Association for many years, kindly made a grant of £50 per annum for a period of ten years for the same purpose The Council recorded its gratitude for this valuable assistance in the effort to maintain and extend the important social side of our work.

MEMBERSHIP

The membership of the Association continued to make progress, and the number of elections was 89 Reductions by death, resignation and revision of the roll leave the net gain 33 The losses by death, 25, were exceptionally severe, and included two of our Vice-Presidents—the Maharaja of Patiala, for some years Chancellor of the Chamber of Princes, who had not only given generous support to the Association but had lectured before it in 1928, and Sir Harcourt Butler, the versatile administrator who only a few weeks before his passing took the chair at the reception to meet Sir John Anderson. The deaths of the Nawab of Radhan-

pur and the Raja of Sawantwadi, as also that of the veteran statesman and maker of modern Bhavnagar, Sir Prabashankar Pattani, further brought home to us a reminder of the close connection of the Association with the Indian States. The roll of eminent Indians who passed away included names so familiar as those of Sir Jagadis Bose, the great scientist, Sir Sorabji N Pochkhanawala, the successful pioneer of Indian-managed banking on modern lines; Nawab Sir Sahibzada Abdul Qayyum, first Premier of the North-West Frontier Province and for more than a generation one of its outstanding figures, and Nawab Sir M Fayyaz Ali Khan of Pahasu. The distinguished Civilians in the long list included Sir Hyde Gowan, Governor of the Central Provinces until ill-health compelled his resignation, and Sir Michael Keane, late Governor of Assam. Lieutenant-Colonel W G Hamilton, who lectured to the Association on "Prison Administration" after retiring from the Director-Generalship of Prisons, Bengal, and was regular in his attendance at our meetings when living near London, was killed in the railway accident between Glasgow and Edinburgh in December.

The accessions to our rolls have included, as usual, many bearers of honoured names among Indian Princes and public men, and British and Indian administrators. His Excellency the Nepalese Minister was elected an honorary member for the period of his residence in this country. The other additions included H H the Prince of Berar, H H Raja Lakshman Singh of Chamba, the Raja of Keonjhar, Sir Robert Bell, Sir Joseph Clay, Sir Maurice Gwyer, Lieut-Col Sir Ralph Griffith, Sir Idwal Lloyd, Sir William Lewis, Sir Lionel Leach, Sir Hormasji Mody, Lieut-Col Sir George Ogilvie, Sir Arthur Page, H.H the Maharaja of Patiala (life member), Sir Ganen P Roy, Major-General Sir Cuthbert Sprawson and Mr F W (now Sir Francis) Wylie, Governor-Designate of the Central Provinces.

THE COUNCIL

In May Sir Malcolm Seton was re-elected Chairman of Council for a further term of three years. There were no changes in the personnel of the Council. H.H. the Maharaja Sindhua of Gwahior

and Major-General the Right Hon Sir Frederick Sykes were elected Vice-Presidents

It is open to any member of the Association to propose a candidate or candidates for election at the annual meeting to vacancies in the Council, subject to fifteen days' notice being given to the Hon Secretary. The following members of the Council retire by rotation and are eligible for re-election

Sir James MacKenna, C.I.E.
Mr P. K. Dutt.
Sir Reginald Glancy, K.C.S.I., K.C.I.E.
Mr F. J. P. Richter
Sir Abdul Qadir
Sir Hugh McPherson, K.C.I.E.
The Right Hon Sir Shadi Lal

THE INDIA MUSEUM

The question of the future of the India Museum was brought to the notice of the Council by Sir Francis Younghusband, in his capacity as chairman of the India Society. In connection with the rebuilding and general rearrangement of the Victoria and Albert Museum, South Kensington, there was reason to fear that the India Museum might not be maintained in its full integrity, and still more that there might be little, if any, scope for its expansion and development. Your Council joined in the protest of the India Society against any step which might have such untoward results, and addressed the India Office separately on the subject. The co-operation of the Royal Society of Arts, the Royal Asiatic Society and the School of Oriental Studies, London University, was obtained. Fortified by these expressions, the Secretary of State for India raised the matter with the Board of Education and an inter-departmental Committee was formed. The organizations mentioned had the satisfaction of being notified by the Under-Secretary for India at the beginning of 1938 that the Office of Works had planned the development of the Victoria and Albert Museum Quadrilateral in such a way as to give more museum space than they had originally thought possible, and had been able to find room for housing suitably the whole of the Indian collections in the Quadrilateral. While gratified with this decision,

your Council concurred in a proposal to set up a Joint Committee on Indian Art and Culture to examine the facilities existing in this country for its study, with special reference to public collections of Indian objects, and to make suggestions and recommendations thereon in the proper quarters. The Committee meets at the Royal Society of Arts and our representatives thereon are Sir James McKenna and Mr F J P Richter.

In another matter co-operative action was taken. Your Council readily concurred in a suggestion made by the High Commissioner for India that members should be circularized in support of the appeal by Her Excellency Lady Linlithgow on behalf of the King-Emperor's Fund to combat tuberculosis in India. The High Commissioner formed a Tuberculosis in India Appeal Committee, on which the Council is represented by the honorary secretary, and a substantial amount had been raised at the end of the year.

The Report would not be complete were reference not made to the fact that the successful course of our activities is mainly due to the indefatigable energy of the Honorary Secretary, Sir Frank Brown. His devotion to the interests of the Association and his tact in the conduct of its affairs are unfailing. The Association has every reason to value his services highly. His colleagues on the Council feel that the members share their gratification at the fact that his long record of service for India in so many directions has been recognized by the knighthood which His Majesty was graciously pleased to confer upon him in the Birthday Honours List.

LAMINGTON,

President

FRANK H BROWN,

Hon Secretary.

May 9, 1938

SEVENTY-FIRST ANNUAL MEETING

THE Seventy-First Annual General Meeting was held at the Hotel Rubens, Buckingham Palace Road, S W 1, 1938. The President, the Right Hon Lord Lamington, G C M G, G C I E, was in the Chair.

The CHAIRMAN I must first make allusion to the fact that we have one official connected with our Association absent today, that is Sir Frank Brown. He has been suffering from a painful illness and wrote to me yesterday that he hoped to attend, and that he had an unbroken record for eleven years of having been at every single meeting of the Association (Applause). I wrote at once and said I hoped he would do nothing of the sort, unless he could do it without any injury to his health. I have had a similar illness and know how trying it is. Now Mr Richter tells me Sir Frank has very wisely decided not to be here. We greatly regret his absence, and feel great sympathy with him, and we hope for his speedy recovery (Applause).

Once again, ladies and gentlemen, I have the honour to present to the meeting the Report of the year. Corporate bodies, unlike individuals, have no "allotted span of life," and there flourish amongst us today some excellent societies which were established in the eighteenth century. This Association dates from the mid-Victorian period, and we are now well in our eighth decade, without—I venture to assert—any signs of the decrepitude of old age, except, of course, in the President!

The Report for the year ending April 30 last has been duly circulated and is a record of varied activities. I think it may be said that the Association has never played a more useful and distinctive part than it does today in the elucidation from many points of view of Indian questions, or done more to fulfil its function of promoting by all means in its power the welfare of the people of India.

In this connection I would note the close attention we paid to the inauguration of the first part of the programme of constitutional reforms laid down in the 1935 Act, and to reports upon the results and prospects of the coming of Provincial Autonomy. We have also surveyed the prospects of the further stages of reform provided for in the Act.

We were especially indebted both to Lord Lothian and Lord Samuel for making under our auspices their first public utterances in this country on their impressions of their respective Indian tours. Both speakers were somewhat pessimistic whether Federation would be inaugurated, owing to British Indian representative and Congress bodies being opposed to unelected State representation in the Federal administration. I believe that it will be possible to reconcile the autocratic procedure and habits of the many generations of the past with what is a very modern outlook of political life, if only the new system is given a fair trial at the start and is properly inaugurated.

Having been thus honoured by Lords Lothian and Samuel, we shall look forward to their example in this respect being followed by other distinguished visitors to India as well as by authorities, both British and Indian, from India. There can be no more suitable medium for such surveys, for we exist not in the interests of any party, whether in this country or in India, but to provide an open forum for the discussion of matters affecting India's progress and welfare.

Members will have noted from the Report that to an increasing degree we have found means of co-operating with other Empire societies, to all of which we are senior in date of establishment. The latest instance of such co-operation was the successful combined meeting with the Overseas League last week, when Sir John Megaw lectured on the tuberculosis problem in India and Lady Lidlithgow kindly took the chair. We have all followed with a sympathy which has found expression in practical support from some of us the well-planned appeal issued by Her Excellency in December of last year to provide funds to fight this scourge, which is today an increasing menace to the health of India.

The Report has little to say upon finance, but that little is of a gratifying kind. It records both the renewal for a further term of five years of the grant of £50 per annum made for hospitality purposes by H.H. the Maharaja Gaekwar of Baroda, and the making of a similar grant by H.H. the Maharaja of Gwalior for a period of ten years. It is difficult to over-estimate the value of this assistance in promoting the social side of our work, and our warm thanks are due to Their Highnesses.

The report of the auditors was received too late for incorporation in the printed records. It is a very satisfactory document. They once again express their admiration for the excellent way in which the accounts have been kept. They note that the net membership has again increased, and that the whole of the annual expenditure of the Association is more than covered by its ordinary annual income. They mention that the expenditure on the generous hospitality of the Association has been met from special contributions, except for a small margin of some £10. They also note that "once again there has been an increase in the valuation of the Association's Indian stocks."

I take this opportunity to thank members of the Council for their constant and close attention to the affairs of the Association and regular attendance at the meetings of the Council. It is a great support to a President to feel he has such an enthusiastic Council at his back.

Sir Ernest Hotson has kindly consented to move the adoption of the Report and Accounts, and Mr. Anant Pattani, the son and successor of our old and lamented friend, Sir Prabashankar Pattani, will second the motion.

Sir ERNEST HOTSON. I deem it an honour to have been asked to move the adoption of this Report. This last year has been one of very great importance and interest to the whole Empire, and I think we can say with confidence that the East India Association has fully maintained its tradition by taking a large share in the hospitality given to all our overseas

visitors and officials. Last summer the eyes of all the world were turned towards London. Visitors from every part of the world, and especially from every part of the Empire, flocked to London for the soul-stirring occasion of the Coronation.

Most appropriately the East India Association combined with the other Empire societies in getting up the great Empire Dinner at Grosvenor House, at which twelve hundred persons and more were present, and at which we had the very great pleasure of listening to the last address made by Lord Baldwin before he resigned the Premiership, an address which was in every way worthy of the great occasion. Besides that we have enjoyed two very pleasant parties at India House and at "Great Fosters" owing to the generosity of the High Commissioner for India and of Mr Hancock.

We also joined hands with the Royal Empire Society in getting up farewell luncheons to Sir Roger and Lady Lumley and to Lord and Lady Brabourne on their departure for Bombay and Calcutta respectively. Those of us who were lucky enough to be at the party to Sir Roger Lumley will remember for a long time the delightful verses which Lord Halifax quoted to us about the way in which they eat peas in Yorkshire. But there was much else of more serious import also. Then again the policy of co-operation with the other Empire societies had a decisive and, I hope, lasting effect when all combined to save the Indian Museum at a moment when it was in serious jeopardy.

While these stirring events were going on in London, India was passing through one of the most critical and formative years in her long history. The Association has always been very fortunate in getting lecturers who have first-hand and authoritative knowledge of these developments, and it has also done its part, as our President has reminded us, in giving a platform for full and free and often very frank discussions. Papers which I should mention are those by Lord Lothian, by Sir Arthur Page on Burma, two very interesting ones on different aspects of the education problem in India by Sir Tej Bahadur Sapru and Mr Wood, and a paper on Provincial Autonomy by Sir Phiroze Sethna, which was read in his absence by Mr A D Shroff.

An Association such as ours cannot fail year by year to suffer grievous losses among its best known and most dearly loved members. When I prepared the remarks I am making to you today, I did not know that Mr Anant Pattani was going to second this proposal of mine, but that must not deter me from making a special mention of Sir Prabhshankar Pattani. He was not only a most devoted servant of the Bhavnagar State and, as the Report says, the "maker of modern Bhavnagar," but was also successively a member of the Executive Council of the Governor of Bombay and of the Secretary of State for India, and for many long years he was one of the most trusted counsellors of the whole body of the Indian Princes. In his family life he was happy, until the death of his wife less than a year before his own death. His personal habits were of the simplest. He had more influence on recent history in India than almost any other of his contemporaries, if we except Mr Gandhi, and he embodied in the fullest degree the old traditions of Indian statesmanship. (Applause.)

You will have opportunities later on, which I know you will take, of expressing the gratitude of this Association to its President and to all its officers, but I should be failing in my duty if I did not express on behalf of the private members of the Association our very deep appreciation of the successful, kindly and tactful manner in which the affairs of the Association have been conducted throughout the year as throughout many past years. And again I should make special reference to our pleasure in the knighthood which was graciously conferred upon Sir Frank Brown, whom we are very sorry not to see with us today (Applause)

With those words I formally move the adoption of the Report and Accounts

Mr A. P. PATTANI I feel deeply honoured at being asked to second the adoption of the Report. I had come here, after having read the Report very carefully, with the intention of saying a few words about it, beginning with the very kind reference that has been made therein to my revered father who passed away a few months ago. But after what your Lordship said about him, and especially the kind words of Sir Ernest Hotson, with whom I know that my father considered it a privilege to work for His Excellency the Governor of Bombay many years ago, I hope your Lordship will excuse me if I find myself unable to say very much. My father always held that the general aim of the Association, which is to promote the welfare of the people of India and to encourage in every possible way the cordial relations between the two countries and between individuals both in India and in England, was one to which any man may proudly give his life. I think he worked to that end, and he also considered it his happy lot that both in India and in England, amongst the people and amongst those who really make a Government of India possible, the Services, he himself had been in the closest association and co-operation. I hope, sir, as a humble member of this Association to continue to follow in his footsteps as best I can.

The CHAIRMAN put the resolution to the meeting and it was carried unanimously

ELECTION OF PRESIDENT

Dewan Bahadur Sir T. VIJAYARAGHAVACHARYA The resolution I have to propose gives me great pleasure, and I am sure very few words of mine are required to commend to you the acceptance of that resolution. It is that Lord Lamington be re-elected as President of this Association. (Applause) Lord Lamington described himself a little while ago as the only decrepit feature of the Association. If I must to a certain extent admit the truth of whatever he says, I am sure we violently dissent on the major portion of it, and I can only say that if he is old, he is eternally young, as his conduct in the Chair shows today. I feel certain that the great success that this Association has attained in recent years has been very largely owing to him.

As regards the Association itself, perhaps you might like to listen to a few words from me, because I speak with almost a disinterested feeling, as

I rarely have the opportunity of sharing in the hospitality of the Association. Whenever I get a chance, I grasp at it, but I get the chance very seldom. Throughout last year I am sorry that I missed that hospitality altogether, because I heard great accounts of it both here and in India. I was sorry that I was kept by my work from all the tamasha that was going on here and in which this Association took so large a part.

The Association not only dispenses hospitality, but its more important function is to afford a platform, on which Indians who come to England can express their opinions, whatever variety of political or other school they may belong to. I think it is well that we have in London, at the centre of the Empire, a place where we can express our views with that freedom which is being gradually circumscribed in Europe till it almost seems to come to the narrow bounds of this island. I think it is in conformity with the traditions of the Empire and of England that there should be an institution here in which we can express our opinions without fear or favour.

India is supposed to be a dull subject, but judging from the meetings at which I have been present, all I can say is that the Chairman and our excellent Honorary Secretary, my old friend Sir Frank Brown, seem to manage to put a great deal of life into the proceedings, and to get very large audiences. So you see some very good reasons why you should accept my proposition that Lord Lamington be elected President, and I have no doubt you will accept it.

Sir MALCOLM SERON. I have very great pleasure in seconding that resolution. My old friend Sir T. Vijayaraghavacharya has expressed more eloquently than I could much that I would wish to say. We all owe a great debt of gratitude to Lord Lamington for what he has done for the Association, and I feel sure that, if he will consent to serve for another year, it will give us great pleasure. As he cannot put that motion himself, I put it to the meeting.

The motion was carried unanimously.

The CHAIRMAN. I am very proud indeed that you wish me to continue in the office of President of this Association. I have very often expressed my willingness to retire if you want me to. Though I should personally regret it, I could not dispute your judgment. But I will not say more on that point now. I want to say how gratified I am that my re-election has been proposed and seconded by two gentlemen such as those who have just done me this very good turn. I appreciate indeed that Sir T. Vijayaraghavacharya should have alluded to the fact that I do not get older. I do get older, but I am glad he does not think so. I also am glad to think that all the doings of this Association are held in such respect and studied in India. It is very gratifying to all of us to feel that what we do here is appreciated in India, and I therefore stress the good and pleasant feeling between this country and India, which adds testimony to the value of the work of the Association.

I might just mention that we have here this afternoon Sir Selwyn

Fremantle, who is Chairman of the National Indian Association, a body with which we have had close relations for many years. I am glad to think that we have its representative here today.

I must express my heartfelt thanks for the honour you have conferred on me in again electing me President of your Association. (Applause)

THE COUNCIL

Dr L. F. RUSHBROOK WILLIAMS. The motion which falls to my lot this afternoon, although a formal one, is none the less pleasant. Those of you who have listened to the speech of the President will realize the responsibility which falls on the Members of Council who are elected annually, and will also realize the debt of gratitude which we Members of the Association owe to them.

This year the names for re-election are Sir James MacKenna, Mr P. K. Dutt, Sir Reginald Glancy, Mr F. J. P. Richter, Sir Abdul Qadir, the Right Hon. Sir Shadi Lal.

We regret to learn of the retirement of Sir Hugh McPherson, who finds that his possible change of residence from London to the country will not enable him to discharge those functions and that responsibility for which I am sure we have all been very grateful to him in the past. As new Members of Council this year, I have great pleasure in proposing the names of Sir Ernest Hotson and Sir Hopetoun Stokes. In regard to the names and records of both of them I need not take up your time. I am sure that their achievements in India and the reputation which they enjoy in this country as well suffice to commend them amply to your suffrages. I beg to move.

Sir SELWYN FREMANTLE. I have been asked to second this motion, and I do so with great pleasure.

You referred, sir, in your speech just now to the National Indian Association. I am here not only in the capacity of Chairman of that Association, but also as one of the oldest members of this Association, and one who very many years ago showed his confidence in the future of the Association by becoming a life member.

I do think that what our President said was correct, that last year has been, if not the most successful, at least one of the most successful and interesting in the history of the Association. I know I have much enjoyed several social gatherings to which we of this Association had the privilege of being invited, and we have also had the advantage of hearing some most excellent papers. For all this we are indebted to you, sir, and to the members of the Council. There are two new nominations—names well known in India—who will strengthen an already very strong body. I beg to second the motion.

The resolution was carried unanimously.

ELECTION OF MEMBERS

Sir HUGH MCPHERSON. I have a small but pleasant task to perform. Before doing so, as I am present at this meeting, I should like to take the

opportunity of making the personal explanation that if I have retired from the membership of the Council it is not through any lack of interest in the proceedings of the Council or in India, but purely because I have been absent from the Council for nearly a year, having been out in India, and there is so much uncertainty about whether I shall remain in London or not, that I thought I had better make way for someone who could more certainly and more successfully serve the Council

I now beg to propose the election of the ten new members, whose names are given in the list. I am sure that these are all fit and proper people to be Members of the Association, and I ask you to elect them

Dr DAMRY seconded the motion, which was carried unanimously

The CHAIRMAN That concludes the business on the agenda, but before we separate I should like to allude to our very excellent friend here, Mr King, who is quite invaluable to the successful working of the Association, always ready and always on the spot, full of information, and always willing to do everybody a good turn (Applause)

SOME EDUCATIONAL PROBLEMS IN INDIA

By A E WATSON

INDIA's many educational problems find a prominent place in the report of the Bureau of Education, India, for the year 1935-36. It is, of course, a weakness of such reports that they deal with history which is apt to be ancient, but the problems besetting the Indian educational authorities in the period immediately prior to the introduction of provincial autonomy are largely those which obtain today, and all the observations in the report are pertinent.

The Educational Commissioner with the Government of India, in his general summary, gives emphasis to the increasing amount of attention given to education by the Provinces, educational bodies, and individuals. This emphasis is made following a comment made by his predecessor in the report of the previous year where the inefficiency of the control and administration of primary education of local bodies and the inability or disinclination of provincial ministries to reorganize both primary and secondary education was made abundantly clear.

The present Educational Commissioner is constrained to proceed.

"Few are the voices raised in support of the present system. The prevailing discontent is finding wide expression, and action must be taken sooner or later."

Then comes a prophecy which has, to a degree, been belied by events. Mr J. E. Parkinson observes that "the political turmoil due to the elections will force education, for the time being, into a less prominent position."

We know that the problems attaching to Indian education have been given the most serious consideration since the inception of provincial autonomy, and that the movement to deflect the student from the purely academic and the blind alley, with which this is unfortunately associated in India, to a more just appreciation of realities has received a tremendous impetus, and very largely from Congress sources which are in a majority in so many of the Provinces.

The Central Advisory Board of Education which was abolished in 1923 as a measure of economy was revived by the Government of India in 1935. This body, which consists of all provincial Ministers of Education or their Directors of Public Instruction, representatives of the Inter-University Board, the Legislative Assembly, the Council of State and nominees of the Government of India, at its first meeting since its reconstitution, centred its

discussion round the question of unemployment among the educated classes. This, as is well known, is one of the primary problems associated with education in India, and indeed in any country where economic circumstances militate against an adequate absorption. Here it may be mentioned in passing that one of the most striking effects of the depression in the United States of America has been the terrific and abnormal rise in the unemployment of graduates.

The Board arrived at the unanimous conclusion that the present system of education in schools required such radical readjustment as not only to prepare pupils for professional and university courses but also to enable them, at the completion of appropriate stages, to be diverted to occupations or to separate vocational institutions.

The writer recently heard this put in somewhat simpler fashion by a well-known Congress orator. Addressing students, many of them graduates of Indian Universities, he said that a farmer's son, educated up to the M.A. standard, automatically achieved that elevation where he would rather starve than soil his hands, yet the same lad, more carefully yet perhaps not so "highly" educated, would automatically become a better farmer.

Also, the heart-searing difficulties of the attainment of employment by graduates of Indian Universities was forcibly brought home to the writer by a Punjab Superintendent of Police but a few weeks ago. This officer stated that he had occasion to advertise as vacant the posts of a handful of village constables—men earning the equivalent of one pound sterling a month. In all he had eighty replies, and a remarkable proportion of these were from young men who had taken their degrees. Perhaps the example of many British public schoolboys in entering the army and the police with the hope of rapid advancement had some bearing upon the inclination of these young men, but the principal and all-absorbing reason was undoubtedly the desire to possess the few rupees which go with a village constable's not always pleasant duties.

The urgency of the problem of readjusting the educational perspective is becoming more and more realized in India, and a demand that action should no longer be delayed was the unanimous verdict of the Central Advisory Board of Education, the Universities Conference, the Punjab University Enquiry Committee, and the Burma Reorganization Committee when these bodies met in the year under review.

Commenting upon this the Educational Commissioner pointed out that there is no intention to deny to children facilities for education, but such facilities should be adjusted to their aptitudes. For such pupils as have little or no bent for a literary form of

education other forms of education should be made available, otherwise pupils will naturally be tempted to pursue a University course of study for which they are not fitted

How extravagant a University education can be for so many from the rural areas was exemplified in striking manner in the Punjab Legislature at the beginning of the present year. Then a respected member from a purely agricultural district insisted upon speaking in Urdu. When chided by the fellow-members, who reminded him that he was a graduate of their own University, he confessed, amidst understanding laughter, that he had been so concerned with his work as a *zamindar* since he had achieved academic distinction that he had almost entirely forgotten the English in which he had once taken honours.

Yet, apart from the waste of money on "unprofitable students," misguided and extravagant competition between the eighteen Universities in India continues, and especially in higher studies and research. It is stated in the report that the Universities tend to become lifeless replicas of each other, that standards of examinations have not improved, and that "specialization" should not be sacrificed on the altar of "expansion."

Provision for the education of girls was again ludicrously inadequate, although the total expenditure on all institutions for females, inclusive of indirect expenditure, showed a small increase. All the Provinces, with the exception of the North-West Frontier Province, spent more money on the education of girls, but the educational authorities of the Province mentioned, while realizing the need for extending female education, could not find the money for its development. It was remarked here that "there exists a genuine and increasing demand for the education of girls, but unfortunately funds are not forthcoming to meet it." Assam too reported that "if more funds were available the rate of advancement of female education could be greatly accelerated, and the present disparity in education between males and females appreciably reduced."

It will perhaps be recalled that in 1929 the Hartog Committee gave prominent attention to the great disproportion between the amount of Government expenditure for boys and that on institutions for girls, and since then the situation has considerably improved, although the disparity is still very great.

For instance, tables included in the Educational Commissioner's report show that among the major Provinces Madras spent the greatest percentage of its Government expenditure on education for females. The figure given is 18·2, but this is illusory, as in Madras co-education exists to a very marked degree.

On the other hand, Bombay spent 14·4 per cent., Bengal 12·5 per cent., the Central Provinces 13·4 per cent., and others less. It

is significant that Bengal, the United Provinces, the Punjab, Bihar, and Orissa are spending more on University education of males than on female education as a whole. Generally it can be said, therefore, that throughout British India the education of females has been neglected in favour of the education of males.

It is apparent, however, that co-education in boys' schools is already doing much to solve some of the problems in the way of primary education for girls. Almost everywhere the prejudice against co-education is now dying out, and it is observed that parents gladly send girls to boys' schools, especially when a teacher from the locality and belonging to the predominant local community is employed on the staff. It is now becoming increasingly recognized that the education of girls is necessary for happiness and progress in town and village, and many of the old forces of conservatism have weakened. Nevertheless, the statistical tables in the report demonstrate that the local bodies, who are mainly responsible for primary education, are more vocal than generous in their support of female education.

In primary education, as in University education, there is an appalling wastage. Calculations show that only about 27 per cent of the children who are admitted into the lowest class of a primary school complete the four years' course, when children may be assumed to have become literate. Thus about 73 per cent of the money now spent on primary education may be regarded as sheer waste. If this waste could be prevented, it is obvious that the funds at present available would suffice for a great expansion, and perhaps it would be more advantageous until popular opinion on the need of education is more strongly developed in certain areas and among certain classes, that the compulsory education for which so many reformers hanker should aim not so much in forcing children to attend school, but in compelling children who have joined a school to remain there until they have completed their course.

The Indian States are also appreciating the need of a review of their educational systems. Another educational report recently issued is that on public instruction in Hyderabad, which is amongst the most progressive States in India. Here committees were appointed some time ago to consider a whole reorganization of the educational system. During the year under review the Hyderabad report shows that primary schools for boys increased by 72, while the number of schools for girls fell by four. The total expenditure on education from all sources also decreased slightly, but that was because of financial stringency. The Nizam's Government gives an assurance to its Education Department that all its demands for the expansion of education will receive due attention at the beginning of the next triennium.

THE NETHERLANDS AS A COLONIAL POWER

BY PROFESSOR DR A. NEIJTZELL DE WILDE

INTRODUCTION

THE overseas territories of the Kingdom of the Netherlands consist of the West and the Netherlands Indies.

The *West Indies* contain some Lesser Antilles—viz, three Leeward Islands. St. Maarten, the northern part of which, St. Martin, is French, St. Eustatius and Saba, and the Windward Islands, Curaçao, Aruba and Bonaire, these islands all being ruled by a Governor. Moreover, Suriname, situated on the South American Continent between French Guiana (Cayenne), British Guiana and Brazil, is also governed by a Governor.

The *Netherlands Indies* are an archipelago, forming the south-west boundary line of the Pacific, situated between Further India and Australia and governed by the Governor-General.

This Governor-General and these Governors rule in the name of and as delegates of the Queen of the Netherlands. The extent and the importance of these territories are very divergent, as the Antilles, mentioned above, cover some 1,200 square kilometres and between them have a population of 87,000 souls. Suriname covers an area of 173,840 square kilometres with a population of only 147,000 souls. The Netherlands Indies, on the other hand, cover 1,900,000 square kilometres with a population of more than 60,700,000 souls.

THE WEST INDIES

I HISTORICAL SKETCH

Historically for the Mother-Country the West Indies were of great importance *before*, and the East Indies, on the contrary, far more *after* the nineteenth century. The obstructions Philip II had put in the way of the Dutch carrying trade, the fall of Antwerp and in consequence the removal of much capital to Holland (soon Amsterdam was to become the first port of Europe)—capital that for the greater part was invested in the carrying trade, led to the extension of the shipping trade in those tropical regions where the Spaniards and Portuguese obtained their products, which were so much needed in Western Europe.

So the salt-deposits discovered in the Leeward Islands in the West Indies led to a lively shipping trade from Holland, which at the same time was made lucrative by a very profitable smuggling

trade in connection with the Spanish and Portuguese possessions in America. In 1621 the first West Indies Company was granted a patent, and since its principal object was, firstly, to inflict injury on the enemy, later, to expel the Portuguese from Brazil—which was a success only to a small degree—and lastly, to conquer land, this again made it necessary to import cheap labour—viz., slaves—and for this object the Gold Coast was conquered in 1637.

From Spain the West Indies Company conquered Curaçao, Aruba and Bonaire, all favourably situated for the smuggling trade on the Spanish colonies on the opposite coast (1634). About 1631 the Dutch settled in St. Eustatius, Saba, and St. Maarten, further in St. Thomas, St. Jan and St. Croix, which three islands were evacuated some years after and then were occupied by the Danes. The French occupied the northern part of St. Maarten in 1640.

After Nieuw Nederland—a colonists' settlement on the Hudson River in North America—had been given up, the profits for the West Indies Company stopped, and in the end payments were suspended.

Through the intermediary of the States-General a second West Indies Company was founded, which took over the possessions of the former Company for 30 per cent.

Whereas the first West Indies Company for the greater part was a carrying trade company for smuggling and privateering, its successor was able to work some commercial stations and managed to run some tropical plantations.

This second West Indies Company subsisted on the recognition payments of the shipping trade and again of the smuggling trade in the Spanish colonies in America, especially of the trade in slaves, for which Curaçao was indeed *the* centre.

For smuggling to North America, St. Eustatius was the proper island, from where arms and munitions were delivered during the American insurrection in 1774. In 1781 it was conquered by the English and ransacked.

In consequence trade was transferred to other islands—viz., to Danish St. Thomas and Swedish St. Bartholomeus.

When the Fourth English War (1784) was over the West Indies Company had continually to struggle with deficits with a burden of debts of £4 millions. In 1791 the States took over the West Indies Company.

Suriname, where the English sugar planters had their plantations on the Suriname River and the Commewijne, was conquered in 1666 by the Dutch and in 1682 became a possession of the West Indies Company, afterwards of "the Society of Suriname," in which the West Indies Company could exercise an option for one-third. Dutch shippers were granted trade on Suriname at recognition. Colonization was encouraged. The West Indies

Company, however, retained the monopoly of the importation of slaves

The number of plantations increased from 50 to 200 (1688)—sugar and indigo—and to 400 in 1733. The number of slaves amounted to 12,000 in 1712 and as many as 25,000 in 1749. Many of them fled into the interior and from there repeatedly invaded the cultivated area. Only in 1775 did the troops succeed in checking those raids.

In the meantime, besides sugar and coffee plantations, cocoa and cotton plantations prospered in Suriname, especially between 1750 and 1770. The value of the goods imported into Holland from Suriname was estimated at f 8 millions in 1785. But the colonists wanted many slaves, which forced them to take up money on mortgages with Amsterdam moneylenders, which gradually made them the latter's tenants.

In 1791 Suriname passed into the hands of the States. Then there were there 3,000 whites, half of them Jews, and 53,000 slaves.

During the Napoleonic wars all those colonies came into the possession of the English. Not before the Convention of 1814 were Suriname and the six islands—Curaçao, Bonaire, Aruba, St. Eustatus, St. Maarten and Saba—returned to us, in 1816 the transfer took place.

In the British colonies, as also in our above-mentioned colonies, slavery was prohibited in 1808. In 1833 it was abolished by England in all her colonies. France followed in 1840, Denmark later on. In the West Indies slavery was abolished in 1863, which procured f. 12 millions as an indemnification for the former proprietors. In Suriname and in the islands 33,621 and 11,654 slaves respectively were liberated. They were in a hurry to leave the plantations, a blow from which Suriname, which as a plantation colony before all needed cheap labour, has never recovered. The fact that owing to the opening of the Suez Canal in 1869 the colonial products from Java, with its prosperous agriculture and numerous and cheap native labour, after 1870 appeared in ever-increasing quantities in the European market, was also decisive for West Indian trade.

After the fall of the Spanish authority in America and the new-born States there had opened their ports to trade, Curaçao also lost its importance as a centre for smuggling, which then had become useless. Thus Suriname as well as Curaçao has been a great disappointment for the Mother-Country since 1816.

After slavery had been abolished in 1863 Suriname had to solve the problem of the immigration of labour. A treaty concluded with England in 1870 allowed us to enlist and ship British Indian coolies. Also Javanese coolies were imported, especially after 1893.

Between 1873 and 1913, 32,000 British Indians and 11,000 Javanese respectively were imported. But agriculture was not a success, paid labour weighed heavy upon the plantations. Moreover, there was much competition from abroad and disease in the plants.

The number of sugar plantations, which in 1833 amounted to 105, was reduced to five in 1914, though with a much wider area than before. The export of coffee (arabica) amounted to 15 million pounds in 1790, to five millions in 1816, whereas it quite stopped later on. Since 1881 Liberia coffee has taken its place with a very unstable market—in 1935 an exportation of over 8½ million pounds, but afterwards again there was a great decline. Many sugar plantations were transformed into cocoa plantations in the middle of the nineteenth century, which between them exported 500,000 kilogrammes in 1870, in 1895 as much as 4½ million kilogrammes, but after the krulote disease broke out there was a turn for the worse and exportation decreased again.

Cotton realized an export of 1,165,000 kilogrammes in 1825, 309,000 kilogrammes in 1860, but since 1885 cotton has no longer been exported. The cultivation of bananas, started in 1906, was also stopped in 1913, on account of the disease that broke out in 1909, of late years, however, efforts have been made to revive this cultivation. Important recent cultivations are those of citrus and rice especially, which is now the principal Suriname agricultural product.

II PRESENT CONDITIONS

At present there is in Suriname a population of 148,971, apart from the 17,000 forest negroes and 3,500 Indians. Of these, 35·5 per cent live in the capital, Paramaribo. The population includes 41,353 British Indians, 33,776 Javanese, 1,962 Europeans, 977 of whom were born in the Netherlands.

Suriname receives a subsidy of some f 3 millions annually from the Mother-Country in order to balance the budget (assets over 1936, f 3·9 millions, liabilities f 6·7 millions).

The American Bauxite Company at Moengo exported 234,845 tons of bauxite in 1936.

The production of gold amounted to 443,487 grammes, of balata to 121,044 kilogrammes, of coffee to 3,321 tons, to the value of f 687,000, of rice to 34,154 tons, of oranges, 6,622 cases were shipped, sugar export amounted to 16,115 tons, to the value of f 427,000—everything together in no way sufficient to raise Suriname from this condition of distress.

For this reason Suriname suffers today from financial impotence. The Mother-Country helped Suriname with f 80 millions from 1867 to 1936, but without any result. Financially matters

remained the same and a solution for the better has not yet been found.

The opening of the Panama Canal in 1914 gave new prospects to Curaçao. The capital, Willemstad, has an ideal harbour for ocean traffic. Another advantageous feature is the fact that the Batavian Oil Company and the Standard have made Curaçao and Aruba into important places for their raw oils from Venezuela, which are there worked up for further distribution.

Thus the economic condition of Curaçao is rapidly improving, and soon the subsidy from the Mother-Country can be dispensed with, 4,579 steamers, with a capacity of 24 million metric tons, called at the harbour at Willemstad in 1928, and 5,241 steamers with a capacity of 31 million metric tons in 1936.

Aruba harbour is nearly as large as that of Willemstad. In 1936, 8.2 million tons of raw oil were imported into Curaçao and 10.5 into Aruba.

In 1936 the total value of the imports from abroad amounted to f 197 millions, f 179 millions of which represented oils, of the rest, the share from Holland came to f 5.2 millions. Exports to foreign countries amounted to f 201 millions, f 23 millions of which went to Holland.

Since 1932 the revenues, as compared with the expenses, of the colonies have shown a credit balance respectively of f 604,000, f 495,000, f 860,000, f 1,253,000 and f 1,389,000 (in 1936). Liabilities to Holland through cash loans, totalling from 1928 to 1931 7.1 million guilders, were redeemed in full. The account with Holland showed a credit balance of f 1,202,000 for Curaçao towards the end of 1936.

THE NETHERLANDS INDIES

I HISTORIC EXPOSITION

The policy of Spain, which had compelled the Dutch to extend their profitable shipping trade to the Levant, the West Indies, etc., induced them, following in the path of the Portuguese, to try and find for themselves a way to the Far East, to the Indies (the Moluccas), the rich, marvellous spice islands. To prevent mutually unfavourable commercial competition the East India Company was founded in 1602—in which the statesman Van Oldenbarnevelt took the initiative.

In accordance with the mercantile standards of those early days the Portuguese, who a century ago had already gained authority in the Indies, carried on a policy of monopoly there, rigorously excluding all foreign traders and keeping the internal trade in their own hands.

The East India Company, succeeding the Portuguese, did not lose time in carrying on the same policy of isolation.

Indeed, in those early days it was considered the usual thing for a country to get from the colonies anything that might be of use or yield some profit to the Homeland, and in any case to further her trade. Thus the East India Company strictly adhered to its monopoly, which realized great profits, according to the ideas of those days, the policy being "The colonies exist only for the profit of the Mother-Country."

The system and organization of the East India Company formed the pattern for most privileged commercial companies founded in other countries in the seventeenth and eighteenth centuries.

In the course of time great loans were granted to the East India Company by the Amsterdam Bank, founded in 1608, residing at the Amsterdam Town Hall, its principal object was to take the place of the private moneylenders, whose actions were considered obnoxious.

This bank, which in the latter part of the seventeenth, and almost during the whole of the eighteenth century had a cash balance of more than twenty million guilders, played an important part in the world trade of those days. In fact, in the seventeenth century Amsterdam was the money market of the world and remained so during the greater part of the eighteenth century. In those days there was a close relationship between this money market, overseas trade and the companies with shares, one of which was the East India Company.

WHAT WAS THE INFLUENCE OF THE EAST INDIA COMPANY UPON HOLLAND?

The staple of the Indian products was transferred from Lisbon to Amsterdam, and so great support was given to the commercial position of the Netherlands. Not only the carrying trade, but also the staple trade was a national branch of business. For the rest, the fight the East India Company, on their own account, carried on with the national enemy was a great help to the Republic. A tax was raised on the shares and bonds of the Company, which from 1680 to 1698 annually brought four hundred thousand guilders into the Dutch treasury.

The Company procured employment for a part of the Dutch nation. From 1640 to 1649, 3,650 hands were annually taken on, and this increased to more than 8,000 after 1750, among whom, however, there was an increasing number of foreigners. In the eighteenth century the number of sailors in the service of the Company was 4,000 on an average, half of them being Dutch.

From 1602 to 1622 the Company paid a dividend of 200 per cent.—viz., 10 per cent per year. The last year in which a dividend was paid was in 1782. During the whole period of its existence the Company paid out 18 per cent. on an average. Through the Company the national wealth increased considerably. Between 1602 and 1782 its capital was paid out 36 times. In addition there were the remittances of the civil officers, the fortunes taken home and the legacies bequeathed. In the latter part of the seventeenth century f 800,000 on an average were annually remitted per mandate, and from 1770 to 1780 f 4 millions annually. The grand total may perhaps be estimated at f 370 millions.

During the first 100 years of the two-centuries-long government of the Company in the Indies, it was first and foremost a profitable trading concern. Gradually, however, the East India Company was forced to intervene in the quarrels of the native princes and tribes, however much they disliked doing so, and in this way they attained great territorial authority. From a trading concern the Company became a State. But in consequence they incurred the onerous obligation of maintaining an army and a navy, the cost of which constantly increased.

It has been rightly said of the East India Company that "it had no history." Often contrary to the advice of their best Governors-General, the directors in Holland always adhered to their system of getting as much profit as possible for the Mother-Country and adhered to their monopoly even in face of the increasing rivalry of the French and English navigators and traders. Together with bad dividend policy, faulty bookkeeping and the insufficient pay of the officials, with consequent corruption, were prominent causes of the Company's fall at the end of the eighteenth century, when the waves of the French revolution began to spread and finally washed away the East India Company. The colonies then became the property of the Government.

In 1794 the liabilities of the Company amounted to f 85 millions, in 1792 to f 112 millions and in 1796 to f 120 millions. The inheritance of the Company, burdened with debts, passed into the hands of the Bataafsche Republiek, which also had to struggle with great financial difficulties. More liberal ways than the Company had followed were first suggested by Dirk van Hogendorp (1799), whose ideas were far ahead of his times.

In 1807, King Louis Napoleon sent "iron-fisted" Daendels to Java to defend it against the English, and Daendels in some way prepared the way for Raffles, who came to Java in 1811 to establish English authority there, but then broke with the past and began to reform the government in a more liberal way.

After the fall of Napoleon the Netherlands recovered their independence, but the Great Powers of Europe required a strong

State that would be prepared to check the French on their northern frontier, and so Belgium and Holland were united and our colonies were returned to us. Thus the young Kingdom of the Netherlands again became a "Colonial Empire."

The new system started by Raffles was maintained by the "Commissarissen-Generaal" (delegates), whom King William I sent to the Indies to take over the colonies from the English. The repression of corruption was continued, the administration of justice improved, the system of "land rent" of Raffles took the place of compulsory cultivation and the contingent system of the United East India Company and gave back to the native farmer the right to dispose of the fruit of his labour. Trade became free and European private enterprise was allowed to participate in non-native agriculture. Liberalism, as contrasted with the system of the East India Company, revealed the importance of well-regulated internal administration as a means of giving prosperity to the population. The system was not to last long. What the Government had omitted to consider was the fact that the simple native farmers were unable to help themselves without guidance and instruction.

When the pressure under which they had worked so long was taken away it was found that the new policy was of no use to them. The Government in Holland had expected that agriculture would flourish and that increase of the products wanted for the European market would favourably influence trade and navigation with the Mother-Country, so that the colonies, instead of being an encumbrance, would become a source of prosperity and wealth to her. But the new system became a great disappointment in this respect.

The Commissaris-Generaal Du Bus, who wanted to attract Western capital and Western agriculture to the Indies, in his well-known report of 1827 put forward suggestions which would prepare the Indian State for fruitful European enterprise, but that only "very slowly." The condition of colonial as well as home finances, however, was very bad, so that a "quick action" remedy was required. For this reason only King William I accepted the compulsory "cultivation system" developed by the Governor-General Van den Bosch, which provided a remedy almost at once. Theoretically it looked very fine, but in fact the native farmer was not left any freedom, he was compelled to cultivate those products that the State wanted in order to improve the desperate finances of the Motherland and colonies.

In the result there were no more deficits in the Indian household. On the contrary there was much profit to the Mother-Country. In 1833 the credit balance amounted to f.3 millions, in 1834 to f.10 millions, and about 1845 the proceeds were the

highest and amounted to f 13 millions. This system lasted some 50 years longer and realized about f 900 millions in that period.

In those years the *Nederlandsche Handelsmaatschappij*, founded by King William I, was of great importance. Originally its object was to revive the languishing trade, navigation and industry in the Motherland.

At the beginning the results were somewhat disappointing, but the Van den Bosch system promised great profits to the *Nederlandsche Handelsmaatschappij*.

This concern received in consignment for sale the products of which the Government could dispose, thanks to this cultivation system, and which consequently did not appear in the Indian markets any longer.

Dutch boats chartered by the *Maatschappij* took the goods to Amsterdam, and thus this port was again made the staple place of colonial products, and national shipbuilding and navigation revived.

In the Indies the position of the British trader, however, was much more favourable than that of the Dutch trader, because the British merchant also imported English textiles, whereas his Dutch competitor did not dispose of similar imports. William I now wanted to make all possible efforts to start a Dutch cotton industry for which the Indies were to be the market. At the so-called secret "linen contracts" the *Nederlandsche Handelsmaatschappij* undertook to spend yearly a certain sum on the purchase of textile products. The duties paid on them in the Indies were returned to the *Maatschappij* and our cotton industry was put on its feet.

But from the increasing quantities of exports, produced under the cultivation system, free trade did not reap any profits, but only the *Handelsmaatschappij*, which to a certain degree was looked upon as a revived East India Company.

It was not so much the system itself, as its faulty application, which proved very oppressive for the population. But the straitened finances of the Motherland needed the proceeds to be forced up and gradually the home finances, which had lacked support, began to depend on the Indian market.

But this system, that became more and more oppressive to the population, deteriorated into a continuation of the contingent system of the East India Company, and in the end there was a primitive form of monopolized State exploitation, the risks for which were for the greater part shifted on to the native farmer himself.

The Dutch people were at first slow to notice the deterioration of the cultivation system, but the new liberal ideas, still weak at the beginning of the nineteenth century, gradually became stronger. Since about the middle of the nineteenth century a revolutionary

reaction had again come over Europe, the Netherlands Parliament had also secured greater authority and influence in Indian affairs, authoritative eye-witnesses and liberal speakers were heard, and consequently the system of Van den Bosch was abrogated.

Whereas the less important compulsory cultivations—often yielding no profit at all—had already been abrogated previously, in 1870 the compulsory cultivation of sugar was also stopped. Only the profitable coffee cultivation was continued, but without its many abuses. The proceeds of this last compulsory State enterprise, however, gradually diminished the credit balances, and remittances to the Motherland grew less and less and then stopped altogether when the Atjeh War broke out in 1873, which was to last twenty years, and cost tremendous sums of money.

II EVOLUTION TO THE PRESENT POSITION

The abrogation of the compulsory cultivation system in Java was a decisive turning-point in our colonial policy, and the more humane policy of liberalism for the colonies was definitely established. Henceforth the natives were allowed to dispose of their toil and the fruits of their labour. The new agrarian legislation of 1870 scrupulously guarded against dispossession of the land rights of native farmers. Moreover, it created the possibility—the importance of which for economic expansion of the Indies had already become evident—of reclaiming waste lands on a large scale for non-State agricultural enterprise.

Before the abolition of State agriculture by forced labour the Exchequer had been dependent on the compulsory cultivations, but now this financial basis had to be changed. Henceforth the Exchequer depended on the European agricultural concerns founded there, as primitive native farming would not be of any avail in this respect. Western enterprise for agriculture was very much furthered by the policy of "open door" and "free trade."

"Free trade" and "open door" were the policies pursued from that time onwards, and thus the way was prepared for the European industrialist to grow tropical produce for international commerce. The economic expansion, owing to this quite new policy, was accompanied by a considerable investment, first especially of Dutch capital in agricultural estates in Java, afterwards also of foreign capital especially on the Outer Islands. It was utilized to found large plantations for mountain cultivations for the production of coffee, tea, Peru bark, etc. In the valleys of Java sugar estates and tobacco plantations were started on the grounds rented for this purpose from the natives, everything being done with native labour and deliveries by a free contract.

As to the Outer possessions, the costly Atjeh war dragged on for

twenty years, and was only ended by complete subjection through the vigorous intervention of the military commander of that time, the General Van Heutsz. This success led to Dutch authority being recognized *de facto* everywhere on the Outer Islands, and thus an era of peace and safety was inaugurated, creating the possibility of further economic development. The demand all over the world for rubber, which began in the first years of this century, led to the investment of much foreign capital, besides Dutch money, in order to cultivate waste lands, especially in the Outer Islands, previously reclaimed, and grow rubber, later also tea, coffee in the newly founded plantations, and enterprises in oil-palm, filament, etc.

Thus it came about that in 1929 about 1½ milliard guilders were invested, more than 1 milliard of which was Dutch capital. If we add to this the sums invested in oil and other mining industries, in shipping and railways, banking, etc., the total investment of capital in the Indies before the crisis may be estimated at about 4 milliard guilders, one-third of which was non-Dutch.

Undoubtedly the open door policy, the plantations on the Outer Islands, the economic expansion of the Pacific countries and the late world demand especially for rubber, led the way to this unprecedented investment of capital, which became the powerful lever which, in the last years before the crisis, raised the Netherlands Indies from a purely national domain into an international centre of tropical produce for the world market. For towards the end of 1929 the investment in Java estates was f 1,332 millions, f 1,118 millions of which were Dutch, f 142 millions British, f 36 millions Franco-Belgian, and f 59 millions Japanese capital. For Sumatra Eastern Coastlands, f 642 millions, f 360 millions of which were Dutch, f 124 millions British, f 53 millions American, f 72 millions Franco-Belgian, and f 137 millions Japanese capital.

For Sumatra Southern Coastlands f 90 millions, f 57 millions of which were Dutch, f 11 millions British, f 32 millions Franco-Belgian.

In Java, the principal investments were made in sugar, f 793 millions, f 779 millions of which were Dutch, further in rubber f 270 millions, in coffee f 105 millions, tea f 143 millions, and Peru bark f 20 millions.

For Sumatra Eastern Coastlands, rubber f 351 millions (f 129 millions of which were Dutch), tobacco f 120 millions, oil-palm f 83 millions, tea f 41 millions, filament f 40 millions.

For South Sumatra Coastlands, rubber f 39 millions, coffee f 25 millions, tea f 14 millions, Peru-bark f 5 millions, and oil-palm f 5 millions.

In 1929 the exports from the Netherlands Indies amounted to f 1,443 millions.

In 1929 the East Indies' share in world exports was in the case of agave 22 per cent, Peru bark 94 per cent, coffee 6 per cent, copra 29 per cent, kapok 75 per cent, oil-palm 14 per cent, pepper 69 per cent, rubber 30 per cent, sugar 10 per cent, and tea 17 per cent

In 1929 the imports to the Netherlands Indies amounted to f 1,088 millions. Of this total f 519 millions came from Europe (f 213 millions of which were from the Netherlands), f 139 millions from America, f 395 millions from Asia (f 114 millions of which were from Japan)

There arose in consequence an enormous trade between the Indies and the Netherlands, and in a lesser degree with several other countries, specially those on the Pacific, thanks to our policy of "free trade" and "open door"

In the Indies the seaports began to prosper, as also navigation, money markets, banking, and directly and indirectly the influence of this general prosperity was felt in the Netherlands Indies and in Holland as well as abroad

The number of Dutchmen who went to the Indies increased rapidly at that time, 40,000 Dutchmen at least were occupied in the Indies and gained their livelihood there. Of the total exports from Holland, the proceeds of which in 1927 amounted to f 1,900 millions, 7 per cent. went to the Indies. Thanks to the Indies some 150,000 people—viz, one-tenth of all the Dutch workers—found regular employment in the Netherlands

But in 1929 the present world crisis began. In the Indies it made itself felt by a tremendous fall in the prices, for the time being more in export than in import prices. This deterioration in price levels made stringent economy a necessity, and consequently there has been reduction in wages and unemployment. Besides, there has been the serious fact that the exports, during and after the World War more and more directed to the Pacific countries, did not find a regular market there any longer, owing to agitation and decreased purchasing power there. So exportation to European markets began to take place. There followed an export trade in the opposite direction—from east to west. The imports into the Netherlands Indies began to come more and more from Asia, for the greater part very cheap goods from Japan, instead of from Europe. Thus there came about an import trade from west to east. The system of barter has been revived, and barter and reciprocity are the order of the day.

So in 1928 25.6 per cent. of the textile imports came from the Netherlands, 27.1 per cent. from England, 30.8 per cent. from Japan. But in 1934 those figures were respectively 7.2 per cent., 2.8 per cent., and 83.1 per cent.!

Owing to the world crisis the proceeds of the total imports

amounted only to f 272 millions in 1935, f 99 millions of which came from Europe (of which f 99 millions, f 36 millions again came from Holland), and f 140 millions from Asia (f 81 millions of which came from Japan)—viz, f.69 millions for victuals and luxuries, f 24 millions for chemical products, f 81 millions for yarns and dry goods, f 25 millions for metals, f 11 millions for vehicles, and f 23 millions for engines

In 1935 the proceeds of the total exports amounted to f 446 millions, f 70 millions of which were for rubber, f 26 millions for spices, f 18 millions for coffee, f 45 millions for seeds and fruit containing oil, f 36 millions for sugar, f 29 millions for tobacco, f 36 millions for tea, f 14 millions for filaments, f 87 millions for petroleum, and f 38 millions for cement and minerals

It stands to reason that the world crisis strongly influenced the Budget of the State, as the Exchequer for the greater part depends on the cultivation of some products for exportation and on mining products. In 1928 the State's revenues (on the common service) of the Indies amounted to f 551 millions and the expenses to f 510 millions, with a credit balance of f 41 millions on the common service

In 1929 this credit balance amounted to only f 8 millions. In 1930 the deficits began—viz, f 85 millions, then f 102 millions, f 141 millions, f 121 millions, and in 1934 f 82 millions.

In 1928 the Netherlands Indies national debt amounted to f.1,000 millions

Owing to circumstances over which there was no control it became impossible for the Netherlands Indies any longer to maintain the policy of "free trade" and "open door," which had been adhered to since 1870

At present, through international co-operation we have arrived at the restriction of tea, Peru bark, rubber, sugar, and tin

To prevent the interior market from getting dislocated, the import of foreign rice, kedele, cement, etc., was prohibited altogether or controlled in every detail

A general emergency import ordinance created the possibility of quotas and licenses, which have been applied for many products. So Dutch industry has a considerable share in the Netherlands Indies imports and could employ many thousands of labourers in our country

In fact, the Netherlands have shares in some eleven Netherlands Indies quotas to a total amount of f.17 millions, the one in textile industry is of great importance. In that branch of industry labour was assured for 7,000 hands in Holland. At present a considerable part of the Dutch cotton industry is supported by the Netherlands Indies quota

A general emergency adjustment has also been made for the

exports, so that objects for exchange with mother-countries have been created according to the policy "*Do ut des*"

Thus economically and financially a series of measures have been taken, with the concurrence of the Motherland, which for the time being deviate from the liberal policy of "free trade" and "open door" This is done only from a defensive point of view, but with the strong intention to return, as soon as circumstances will allow, to the former liberal policy so necessary for the welfare of the Netherlands Indies, an export state *par excellence*

There have been several signs pointing to an economic revival Since 1936 a more prosperous future may be looked forward to, though again there may be trouble in the exportation to the markets in the agitated Far East, also extra expenditure may be necessary for defence because of the conditions in the Pacific Symptoms of all this may be stated in the Netherlands Indies Budget

In 1935 there was a deficit of f 33 5 millions on the common service, in 1936 of f 21 5 millions, in 1937 a balance of f 8 8 millions For 1938 the expenses of the common service are estimated at f 377 millions and revenues at f 372 millions, the extra expenses at respectively f 83 millions and extra revenues at f 50 millions, so a total deficit of f 38 millions, f 33 millions of which are for extra expenses, especially defence

In 1935 the Netherlands Indies national debt had risen to f 1,500 millions, with an obligatory payment of rent of f 59 millions, and redeeming f 22 millions, which is a heavy burden on the Budget At the end of 1937 the Netherlands Indies national debt amounted to f 1,367 millions

Even a short time ago the Netherlands Indies could defray all the expenses of government as well as of the army, for the navy the Motherland has always defrayed part of the cost During the crisis that item has been considerably increased Of great importance for economic revival has been the recent rise in the price of exports, because the economic depression did not so much influence the export weight as the value of those products Moreover, the emergency measures taken by the Government have undoubtedly contributed towards the cost of the reconquest of the Netherlands Indies market by the West This is also the case with the Netherlands, and at the same time a withdrawal by Japan has become noticeable

FUTURE PROSPECTS

COLONIZATION

First of all there is to be considered the question whether the Netherlands Indies, or perhaps Suriname, would not be the

appropriate outlet for colonization and provide a solution for the difficult and grave problem of Dutch unemployment. It seems natural enough that the thinly populated districts of the Outer Islands should be the appropriate territory for colonization from the Netherlands. But here the facts have proved that there are many difficulties.

In Java, in spite of her over-population, there is still an increase of half a million per year. Attention has been repeatedly drawn to the benefit that would result from the emigration of Javanese and of the Eurasian population in Java to the Outer Islands. In Java only a very limited area is available for the extension of native agriculture, and within a short time this will be completely exhausted. The attempts at colonization of the natives with their simple standard of life have at last become more successful, but the Eurasians have another, a higher standard, and the results in regard to their colonization have not been very successful. The districts that would be appropriate for them are few, the Dairi Islands in Sumatra and especially New Guinea have been considered, but advertising for immigrants in that territory seems premature and not yet justified, as only little is as yet known of that large land, and that little is not promising, so that the Government has repeatedly issued warnings against expectations aroused by advertisements for colonization from the Netherlands.

Far more exploration needs to be made before it can be ascertained whether immigration and colonization are likely to succeed in New Guinea to any large extent. What is known about New Guinea at present is not very encouraging, but still there are many as yet unknown factors and circumstances that may turn out to be favourable in the future.

WHAT OTHER PROSPECTS MAY THE FUTURE HOLD IN STORE?

Owing to the depression the international free markets disappeared for the greater part, also for the Netherlands. Many countries with which the Netherlands had entertained commercial relations before tried to keep or redress their balance at home, excluding all foreign competition also with a view to procuring employment for the ever-increasing number of idle hands. So, more than ever before, the oversea markets, also for Holland, have attained great importance as outlets for their agricultural and industrial products, but for that reason low prices and continual adjustment to those markets will be necessary.

For the time being the Netherlands Indies will remain an export country, especially for the surrounding Pacific countries, sending out agrarian and mining products (sugar, rubber, tea, coffee, filament, copra, Peru bark, tobacco, palm-oil, tin, and oil).



In this respect Dutch capital and Dutch enterprise will remain of primary importance

The defraying of the expenses necessary for the rapid development of the Indies has only been possible because of the revival of the Western estates and concerns there. But only provided their products can regularly be disposed of in the foreign markets will they be able to hold their own. Those Indies products have often proved to be of great value as objects for negotiations when negotiations about commercial treaties were being conducted between the Mother-Country and other States. Extension of the overseas trade—whenever possible—together with further development in transport trade, etc., may lead to the creation of new outlets, which also in the Motherland may perhaps relieve the surplus of population and consequently provide labour for many people there.

It can easily be seen that owing to the unfavourable exchange relation between native agricultural products and European and American industrial products, many hope for a rapid development of native industrialization in Java, and certainly the advantages of a greater industrialization of the Netherlands Indies cannot be denied. So we can account for the rise of a modest native home industry which for some millions provides a small source of income, for others a welcome addition to what they earn already by agriculture. The development of a native home industry is necessary to procure employment in another line for the surplus of the decisively agrarian Java population, which in thirty to thirty-five years will be doubled, whereas there threatens to be a shortage of soil within a short time. Before anything, this native industry will have to face competition with the cheap articles imported from other oriental countries, such as Japan and China.

For Western manufacturers it will be necessary in the first place to produce those articles that are wanted and in demand in the East and that are not made there as yet. The capital and skilled labour needed for this industry may be Dutch again. A great advantage for our trade and industry in the overseas territories is the fact that the whole governing apparatus is in our hands, and Western tuition supports Dutch ideas and principles.

To be sure, this is a grand task for our educated young people and young professionals in those far tropical regions in the Government, the army, the police, jurisdiction, and education. Thus also in the future the Netherlands and their overseas possessions can co-operate economically and culturally. Assuredly for the Netherlands Indies as much as for other countries the future is still very unsettled and there are great anxieties and difficulties to be faced, but there are also many new prospects for the Netherlands Indies as well as for the Mother-Country.

MALAYAN FORESTS AND THEIR UTILIZATION

BY H E DESCH, P A S I, B S C, M A (OXON)

(Wood Technologist, S S and F M S)

THE British sphere of influence in the Malay Peninsula embraces an area of approximately 50,000 square miles, of which nearly 77 per cent is classified as "forest land," about 20 per cent being reserved forests set aside to guarantee timber and water supplies in perpetuity. In theory this area is administered by separate forest departments in the different Federated and Unfederated States, but in practice there is a unified Malayan Forest Service, administered by the Director of Forestry, Straits Settlements, who is also Adviser on Forestry, Malay States. This officer has executive authority over the headquarters establishment at Kuala Lumpur and the research organization at Kepong. In addition, after consultation with the administrations concerned, the transfers of officers throughout Malaya are made on his advice. Finally, the Director makes periodical visits to the Malay States outside the Federation in an advisory capacity, and on the invitation of the Governments of those States.

The aims of the forest department are to make the country self-supporting in timber and firewood, to protect water supplies and guard against wholesale erosion, and to prevent the wanton destruction of timber on land earmarked for ultimate alienation for some specific purpose—e g, farming, mining, rubber production. The policy has involved the creation of reserved forests in various localities, and forest rules that govern the removal of forest produce anywhere in the Peninsula. These rules have legal status by reason of forest enactments that have been passed from time to time.

At present Malaya is an importing country as far as forest produce is concerned, but at the same time there is a considerable export trade, mainly of inferior-quality timber. It is probable that imports will continue to exceed exports for many years to come, but there are indications that the export trade is growing. It is not envisaged, however, that all the forest reserves, as now constituted, will necessarily always remain so, while other areas not yet explored will no doubt be added in due course. The area reserved may appear large, if judged solely by its ability to supply local requirements, but not if the protective value of forests and their influence on the climate are taken into consideration. Excisions

and adjustments of area to keep pace with industrial and other developments will doubtless be necessary, but until an overwhelming case is made out their continuance as forest must be guaranteed.

The forests of the Peninsula lie within the tropical rain-forest belt, the tree species being of the evergreen type. The climate is equitable throughout the year, without any marked seasonal changes, except on the east coast, which comes under the influence of the north-east monsoon. Rainfall varies in different parts of the Peninsula from as low as 70 to more than 150 inches per annum, and over large areas is in the region of 100 inches.

The precipitation is spread over the whole year, although maximum periods tend to occur bi-annually, centred around the months of November and April. It is unusual to experience more than three to five consecutive days without rain. Temperatures exhibit similar moderation, the daily range on the plains being between 70° and 90° F. These conditions result in luxuriant vegetation that more nearly conforms to the traveller's "impenetrable jungle" than do most tropical forests. Moreover, in their natural state the forests were uninhabited, except for primitive tribes in the hills and fisher-folk along the rivers, and before the advent of European development in the Peninsula the forests were not cut up by well-worn trade routes as, for example, are those of the west coast of Africa.

Five well-developed types of forest may be recognized in the Peninsula: (1) Littoral forests, including the mangrove swamps and beach forests, (2) fresh-water swamp forests, (3) low-land dipterocarp forests (up to 2,000 feet), (4) high-hill dipterocarp forests (2,000 to 4,000 feet), and (5) mountain forests.

(1) *Mangrove swamp forests* These cover an area of more than 460 square miles, chiefly on the west coast. They are worked intensively on short rotations for firewood, charcoal, and poles. Normally the canopy is closed, the area being covered with a pole crop up to 80 feet in height, with girths up to 5 feet, and a few large trees left over from previous rotations. The species are few, typically with stilt roots and other adaptations for growing in a soil unsuited to most plants, and an undergrowth is practically non-existent. Large areas are inundated twice daily at high tide, but the higher ground may be inundated only by spring tides. The soil varies from almost liquid mud to relatively stiff mud.

Beach forests These occur wherever there are no mangroves or rocky headlands that bring the inland flora down to the sea. The forests consist of a narrow belt on the sea coast, rarely more than a few chains wide. Casuarina trees dominate long stretches of this belt, particularly on the east coast, but elsewhere this species may be mixed with or replaced by some half-dozen littoral tree species. The beach forests have no economic value.

(2) *Fresh-water swamp forests* These cover extensive tracts of alluvial flats near the coast. Until recently, when sawmills fed by light tramways have opened up considerable areas of these swamps, they were of little economic value. The tree species are few in number compared with the inland-dipterocarp forests, and frequently characteristic of this type of jungle. The individual trees do not attain the dimensions of the dominants of the inland forests proper, and palms and screw pines often constitute a considerable proportion of the forest cover. The commercially important trees include two species of *Shorea* of the red meranti class, punah (*Tetramerista glabra* Miq.), geronggang (*Cratoxylon arborescens* Bl.), and melawis (*Gonystylus* sp.). The soil, which is peaty to a depth of several feet, is often inundated after rain.

(3) *Low-land dipterocarp forests* It has been estimated that this type of jungle at one time covered at least 75 per cent of the land area of the Peninsula, and it is probable that it still represents 60 per cent of the total. Forests of this type constitute the bulk of the commercially exploitable jungle, and represent the timber capital of the country. They consist of an upper story, often averaging over 150 feet in height, in which dipterocarp species abound (meranti, balau, keruing, chengal, etc.), but they also contain representatives of practically all the other commercially important timber species of the Peninsula, except mangroves. There are usually several under-stories of pole species, a thick shrubby undergrowth, and an abundance of climbers, including rotans, that weld the whole into a well-nigh impenetrable mass. These forests also provide several minor products, of economic value—e.g., damars that are used in the manufacture of varnishes, and jelutong used in the manufacture of chewing-gum. Probably upwards of 2,000 tree species occur in the low-land dipterocarp forests, and although only a few are of outstanding importance the majority are a potential source of timber for some purpose or another. Although these forests have suffered considerable inroads in the past, they are still capable of providing an appreciable annual out-turn of serviceable timber.

Hill dipterocarp forests Running down the Peninsula, but petering out in Johore, is the Main Range, and there are two or three subsidiary ranges. These are high hills up to 4,000 feet above sea-level, with peaks exceeding 6,000 feet. Although slopes are steep and outcrops of rock are numerous, the hills are covered with tree growth. Between the 2,000 feet and 4,000 feet contours dipterocarps predominate, but of different species from those in the plains. Towards the altitudinal limits, dipterocarps become scarce and the character of the jungle becomes markedly different. The forests carry a considerable stand of potentially merchantable

timber, but except where hill stations have been developed, inaccessibility has preserved them from exploitation and is likely to do so for a long time to come. In character these forests are rather more open than those in the plains, and the dominants do not attain the same maximum dimensions, but one or two species tend towards a gregarious habit.

Mountain forests These forests occupy the upper slopes of the principal high-hill ranges and the tops of the mountains. Several sub-types may be recognized, corresponding with altitudinal zonation. The hill dipterocarps give way to the mountain-oak forests, which in turn are replaced by mossy forest or xerophytic scrub. The forests have no economic value as a source of timber supplies, although several species may prove useful for local building purposes. The soil cover is important, however, as protection against excessive erosion, and for regulating stream flow to the plains.

Reviewing the position as a whole, it may be said that the mangrove forests are more or less static in area, and they are today under intensive and controlled working. The fresh-water swamps are not well known, and until recently they were seldom worked. Today appreciable areas are being exploited by comparatively small, semi-portable mills. No special rules are in force to safeguard the future of these forests, but, from the young regeneration coming up, there are indications that the regrowth will not be inferior to the existing crop. The low-land forests have suffered most in the past; the 10 per cent. of the total land area that is at present under rubber was once under forest of this type, and other areas have been cleared for mining or agricultural settlement. Nevertheless, a considerable area has been reserved, and large tracts are being exploited intensively by small mills of the type already referred to, instead of being denuded of one or two especially valuable timber species. The hill dipterocarp forests have suffered but little from the opening up of the country, although considerable areas have been destroyed by shifting cultivation by the hill tribes. These forests are likely to escape serious inroads for many years to come, and large tracts are preserved as water-catchment areas. The mountain forests have undergone least change of all, but agricultural development and the creation of hill stations may cause reduction of area in the future.

The present forest policy is aimed at improving the growing stock in reserved forests and encouraging the intensive exploitation of those areas that may eventually be alienated for some specific purpose. The problem in the reserves is to increase the proportion of valuable timber species. This is being done by removing unwanted species, either by commercial workings under permit or by departmental operations at Government expense.

Operations are designed to open up the canopy gradually, thereby producing sufficient light for young seedlings to develop, but at the same time protecting them and the soil against deterioration. When the young crop is established, the remaining trees of the mature crop are removed.

Where there are good local markets for forest produce the unwanted species are removed first, in firewood or pole fellings. Alternatively, in the last two or three years semi-portable mills that take all, or practically all, species of timber size have been erected. Mill-owners have received official encouragement by remittance of royalty on the less popular species, combined with permission to remove a certain proportion of the wanted species that ordinarily would not be felled until the young regeneration was well established. In the absence of local markets improvement fellings have to be carried out at Government expense. Several methods have been tried, and the one in most general use today is to poison-girdle trees of the unwanted species. Whether commercial workings or departmental operations have been adopted for the first stage, the second is the same in both cases: when the young regeneration is established the overwood of valuable timber trees is removed in a revenue-producing final felling.

The local timber market is not a highly critical one as regards the segregation of species or the grading of produce, but it is conservative. The former method of exploitation by hand-sawyers resulted in selective working: only those timbers that were easy to convert with hand tools were taken. Moreover, local practice in the utilization of wood placed all but the most durable at a disadvantage: design of structures did not follow scientific principles that reduce the incidence of fungal and termite attack, seasoning, except for a little surface-drying of boards on the building site, was unknown, and wood preservatives were not in use. The combination of selective working and bad utilization resulted in marked preferences for certain timbers and strong prejudices against others.

But the buyer was not and is not always competent to recognize his timbers, and the astute producer has traded on this. In consequence, the few timbers that are known to the market are not so much individual species but timber classes. For example, the standard general utility timber, that takes the place of "deal" or Baltic redwood on the home market, is *meranti*. Because of the large number of closely related species in the jungle, this may properly be regarded as the product of over thirty distinct botanical species of the genus *Shorea*, but in practice trade *meranti* may consist of any of these, and as many more of different genera and families. These latter woods may lack several of the qualities

of genuine *meranti*, but being superficially similar in appearance they are accepted. On the other hand, many other timbers that are superficially distinct, and which are perhaps difficult to convert by hand, are rejected irrespective of their intrinsic merit. This is a factor of some economic importance now that sawmills have rendered a much larger number of timbers exploitable—all those of the general utility class that are not sufficiently similar to pass as *meranti* have to be sold unclassified at lower prices. Moreover, there is no empirical knowledge on which to judge the new timbers. The research branch of the forest department is, however, tackling the problem, and special studies of the commoner, but at present largely neglected, timbers are in hand.

The local timber market operates under another and more pertinent handicap—namely, the widely fluctuating demand, and concomitant fluctuations in price, of timber. The trade of Malaya, and the prosperity of the country, is bound up with the fortunes of the country's two major industries—tin and rubber. Although the largest producer of these primary products, Malaya has no say in their consumption, with the result that her domestic position is in a constant state of flux. So pronounced is this influence, however, that the chairman of a large local trading firm was constrained to point out that "normal" times are unknown to the country! The effect on the timber industry is most unfortunate. For example, at one time last year $\frac{1}{2}$ -inch boards were fetching almost \$60 (£7) per ton of 50 cubic feet, but by the close of the year this price had been halved. Moreover, at the time of peak prices mills were working all out, almost any tree of sufficient size was converted, and there was a rush of applications for sawmill sites, while today some of the existing mills are working only five days a week, or are closed down, and the preference for some tree species to the exclusion of others is again very noticeable. This frequent swing in production and consumption of timber accentuates the already difficult problem of controlled forest management in the tropics. The forest department has the position in hand, however, and is taking steps to protect the young sawmill industry against excessive zeal in times of prosperity—it is proposed to introduce a system of licensing of all mills. New propositions will be considered in relation to potential markets, and the suitability of the sites and equipment proposed. Those that are approved will be given technical advice in the layout of plant, and a guarantee of an adequate area of forest over a period of years. It will be appreciated, however, that with domestic requirements in so fluid a condition it is very difficult to plan a long-term policy to the best advantage.

Since its inception in 1901, the forest department has been an important contributor to the revenue of the country, and, except

for the period 1931 to 1933, has always been able to show a considerable surplus over expenditure. The total revenue from 1901 to 1935 amounted to \$36,042,335, and the surplus of revenue over expenditure was \$11,094,906. Moreover, the total deficit for the three years 1931 to 1933 was more than recovered in 1934. The surplus for 1935 was over 250 per cent up on that for 1934, and in 1936 there was a further gain of 50 per cent over the figures for 1935. The rising trend has been more than maintained in 1937, but with the present prices for tin and rubber is not so likely to be repeated this year.

The picture portrayed in the preceding paragraph cannot be matched by other colonies, and, in that it has been achieved without a reduction in marketable forest capital (the alienation of low-land forests for rubber cultivation was not made in the interests of forest revenue), finds a parallel within the Empire only in India. The forest department would, however, be the first to disclaim sole credit for this achievement, recognizing that its prosperity is bound up with that of the country as a whole. At the same time the present tends to weigh heavily with the critics, as was experienced in 1932, and it is pardonable to resent a short-term criticism of a long-term venture.

The out-turn of timber from the forests of Malaya (including Brunei) was 12,029,944 solid cubic feet in 1936. In addition, imports of saw-logs (mainly from the Netherlands Indies for conversion in the sawmills in Singapore) totalled 99,784 tons of 50 cubic feet, equivalent to about 2,500,000 cubic feet of sawn timber, and imports of sawn timber and teak a further 400,000 cubic feet. But these figures by no means represent the total Malayan trade in timber and forest produce. Including poles and fuel wood, the total out-turn of major forest produce from Malaya and the State of Brunei reached the formidable figure of 32,495,229 solid cubic feet in 1936! The value of minor forest produce, including dammar, jelutong (a constituent of chewing-gum), rattans, and gutta-percha, added a further \$180,593 to these totals. In addition, imports of round wood, firewood, charcoal, etc., amounted to 94,729 tons, the figures for round wood being in tons of 50 cubic feet and those for firewood and charcoal in tons weight. Finally, imports of manufactured timber goods, including plywood chests, furniture, and wooden ware, totalled \$1,443,610.

The economic significance of the trade will become apparent when the figures cited are turned into money values. Accurate statistics are not available, but if we take the low minimum of \$20 per ton for timber, and \$5 per ton for fuel wood and poles, a very conservative estimate is achieved. This estimate is as follows

*Estimate of Value of Malayan Trade in Timber and
Minor Forest Produce in 1936*

	\$
12,029,944 solid cubic feet of timber, or, say, 240,600 tons, at \$20 per ton	4,812,000
Minor forest produce	180,590
Firewood, poles, etc., 20,465,285 solid cubic feet, or, say, 410,000 tons, at \$5 per ton	2,050,000
Total imports unmanufactured timber, fuel wood, etc	2,422,800
Total imports manufactured timber (plywood, furniture, and wooden ware)	1,443,610
Total	\$10,909,000

The figure of nearly \$11,000,000 represents more than one and a quarter million pounds sterling, a small proportion of the total trade of the country, but a not inconsiderable factor when its true perspective is appreciated. In the first place the trade is not by any means a wasting asset, being concomitant with an amelioration of the capital resources of the country. In the second place, the results have been achieved by a revenue-earning department that, except for a short period coincident with a major world-wide slump, has always shown a surplus of revenue over expenditure, and in 35 years has earned over four million pounds sterling for revenue. And finally, the trade has provided considerable earning and spending power to a large labour force. This last factor is of some importance because wages in forestry enterprises tend to be lower than in many industries, but the percentage of labour costs to total costs is exceptionally high.

Perhaps the most interesting feature of the timber trade of Malaya is the development of the sawmill industry. This is of comparatively recent growth, as may be gauged from the fact that the number of mills has more than doubled in three years. By the close of 1934 there were 22 mills in the Federated and Unfederated States, but by the end of 1937 49 mills were in operation and others were under construction. These mills are of the semi-portable type, powered by horizontal wood or sawdust burning steam-engines of 90 to 120 h p. The typical layout consists of a 72-inch circular breakdown saw and three to five smaller resaw units. In the larger mills the breakdown saw has a rack bench, and the resaws have drag-feed benches for boards, planks, or scantlings, and a hand-fed bench for waste. In addition, there is a winch for log haulage and a grindstone for filing saws. Power is transmitted by belts from an overhead or underground pulley shaft. The intake of logs varies from 15 to 60 tons of 50 cubic feet per eight-hour day (seven hours sawing time and one hour for re-

sharpening saws and manipulation of logs) The maximum daily output is 30 to 35 tons of converted timber in board and scantling sizes

The development of the sawmill industry is of more than parochial interest. It has been demonstrated that several species that have been neglected in the past because of their recalcitrant working qualities with hand-saws present no difficulties with machine tools This fact transfers many more species to the merchantable class, resulting in more intensive working of the forest Moreover, "frontage scratching" is no longer justified, because intensive working permits of expenditure on improved methods of extraction—i.e., metalled roads and light tramways These in turn allow of the handling of larger logs of greater length than is possible with animal haulage, and extraction can be expedited, reducing the incidence of borer attack in certain timbers The net result in the long run must be a reduction in timber prices to the consumer, although so long as hand-sawing and mill-conversion exist side by side inflated prices are liable to persist to the benefit of the mill-owners

In conclusion, a few remarks about the export trade in unmanufactured and manufactured timber may not be without interest The total value of this trade in 1936 amounted to \$735,906, or rather under £100,000 By far the largest item in this total was the export of sawn timber, amounting to \$480,680 For many years the largest market was Hongkong and China, but in 1936 there was a falling off in this trade, which was, however, more than offset by gains elsewhere In 1936 the Netherlands Indies became our best customer, and this position was strengthened in 1937, partly as a result of the Sino-Japanese conflict Other important low-grade markets are those of Mauritius and Arabia Exports to the United Kingdom are of recent growth, originating from special efforts during the slump years. From small beginnings the volume of business has grown gradually until exports in 1937 totalled 25,773 cubic feet

Only a small proportion of the Malayan output is suitable for the exacting requirements of the British market, but the present position is no criterion of eventual attainments Moreover, unlike the West African forests, the Malayan ones do not yield a large percentage of valuable ornamental timbers those that occur in sufficient quantity for export are of the general utility class. In consequence it is only the cream of the production that is able to stand the high homeward freight charges Further, the local demand for timber is such that only good prices will tempt the producer to cater for the high standards of an exacting market Nevertheless, the changes that occurred in the last quarter of 1937, when all previous records were easily beaten, are an indica-

tion of what may be achieved if a steady flow of orders at a fair price is maintained. The present organization alone could probably treble its production of high-grade produce if prices and freight charges remain unchanged.

The principal timber at the moment is keruing, equivalent to Philippine apitong, Siamese yang, and Burma gurjun—and by equivalent is meant synonymous with. These timbers frequently reach the consumer as Philippine or Bornean teak! Next in importance to keruing is meranti, equivalent to Philippine lauan and the Bornean serayas and "cedars," but often sold as Philippine mahogany. Other timbers that have been exported are jelutong and kapur (equivalent to Borneo camphor wood).

Meranti and kapur suffer from the disadvantage of being frequently attacked, when living trees, by boring beetles. The particular insects concerned are incapable of living in dry wood and so are not a source of infection to unattacked timber, but they do leave more or less conspicuous tunnels in the wood. Such timber is the equal of uninfected material so long as the tunnels are not sufficiently numerous to weaken it or spoil its appearance, but it finds no favour on the home market. The frequency of borer attack renders a large proportion of the output of these timbers unsuitable for the prime grades, and the necessity for disposing of the whole production is a definite counter to unlimited expansion of the export trade.

One other item of interest is the growth of the local production of plywood, principally for rubber chests. Imports are still many times in excess of exports, but there are indications that much of the prejudice against the local produce is dying down. The agency system, however, whereby rubber estates buy their requirements through their local agents, who are also agents for European exporters, is a stumbling-block to a true valuation of the Malayan article.



FIG 1 —MANGROVE FORLS1
Note actual roots that are covered by high tides.
Courtesy of the Forest Research Institute

Malyan Forest and Their Utilization

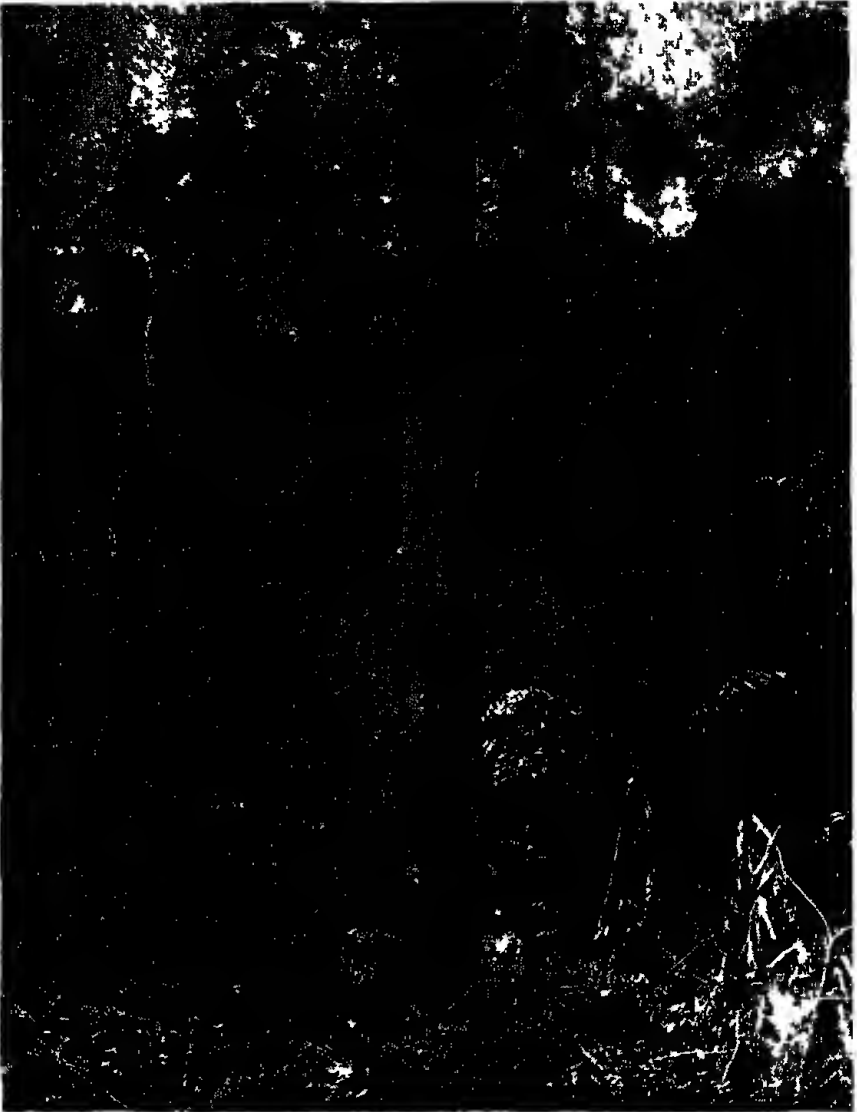


FIG 2 — FRESH WATER SWAMP FOREST

The tree in the foreground is *Shorea rugosa* a source of commercial dark red meranti
Courtesy of the Forest Research Institute

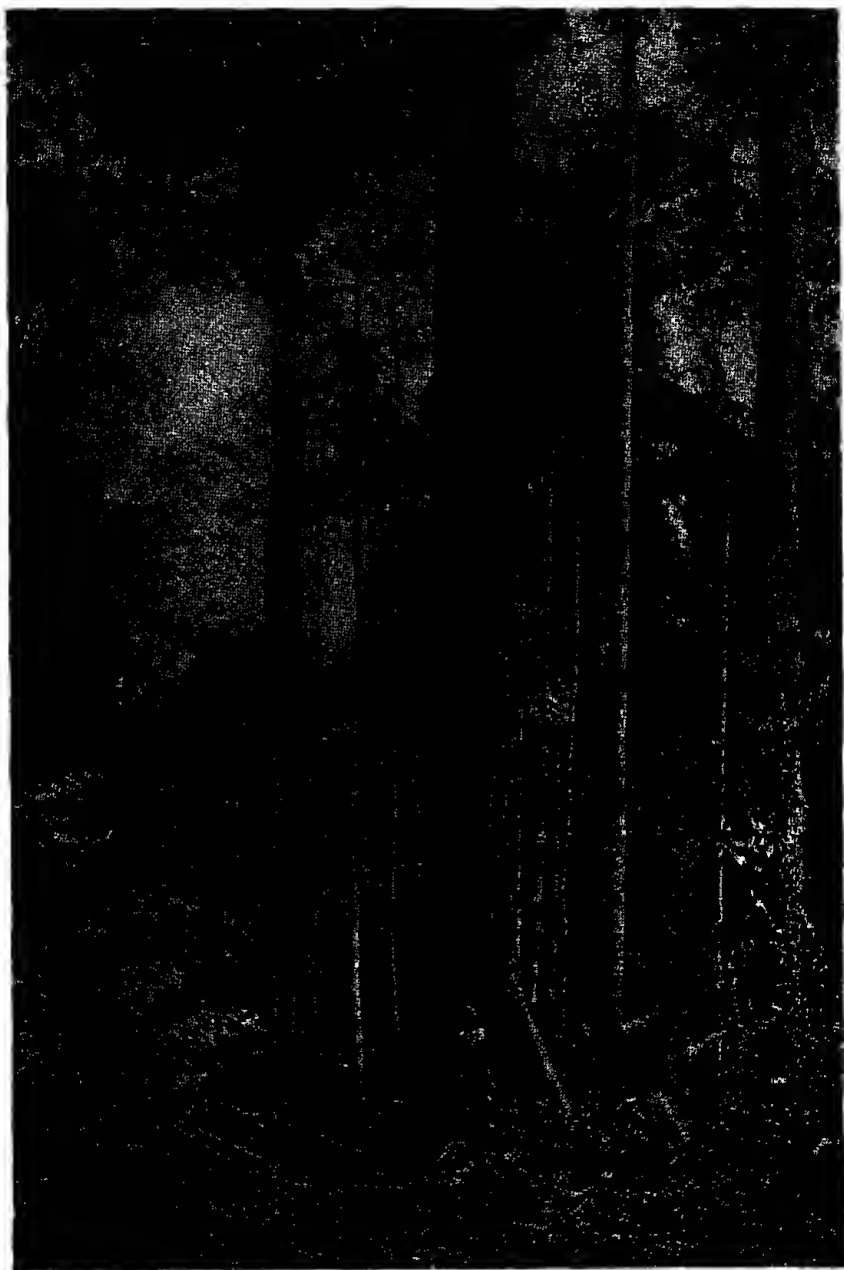


FIG 3 — HILL DIPTEROCARP FOREST

The tree in the foreground is *Shorea Curtisii*, a high grade, dark red meranti.
Courtesy of the Forest Research Institute



FIG 4 —NATURALLY REGENERATED FOREST OF *AAPUR* (*DRYOBALANOPS AROMATICA*) ABOUT 26 YEARS OLD LOW LAND DIPTEROCARP FOREST

Courtesy of the Forest Research Institute

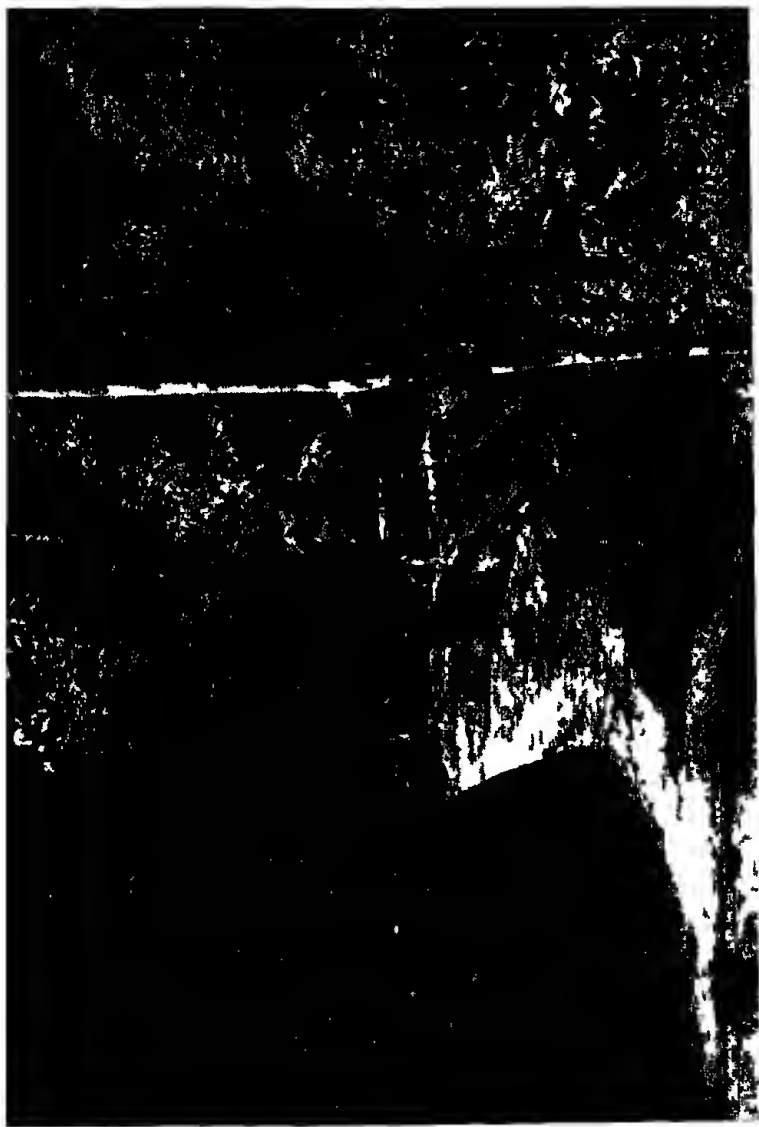


FIG 5—EXTRACTION ROAD IN LOWLAND DIPTEROCARP FOREST

Courtesy of the Forest Research Institute

Malayan Forests and Their Utilization



FIG 6A —SEASONING ON SITE

This method is often to be seen on building sites and while effective in drying the timber it is unduly drastic and results in considerable end splitting and cupping of the boards

Courtesy of the Forest Research Institute

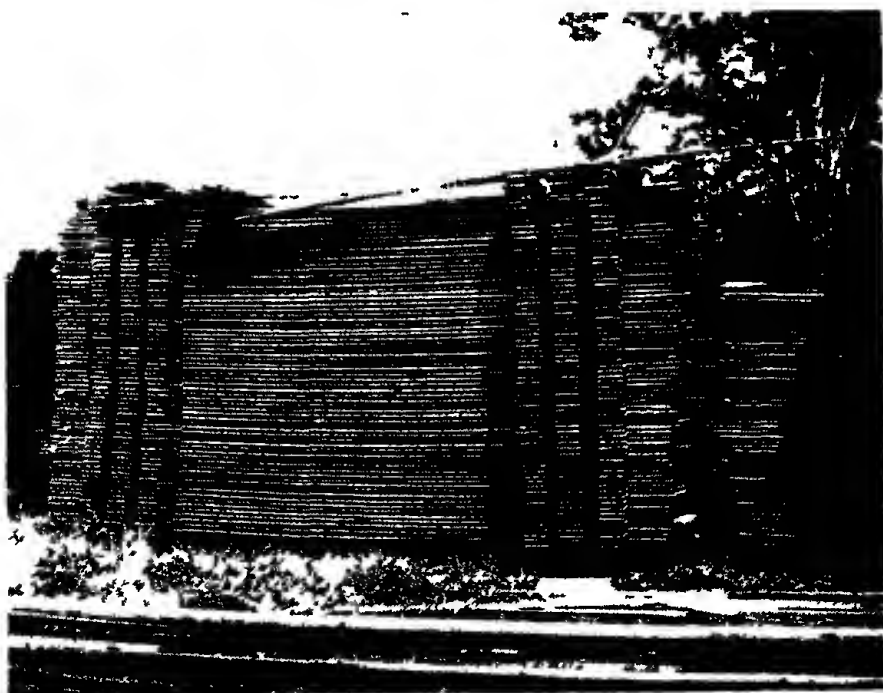


FIG 6B —SEASONING AS SOMETIMES PRACTISED IN MALAYA

The method is effective in drying the timber, but the long lengths of unsupported boards and the unprotected ends result in considerable degrade from bowing and end splits

Courtesy of the Forest Research Institute

Malayan Forests and Their Utilisation.



FIG 7 —“PANLONG” EXTRACTION

The log is mounted on a sledge (see Fig 3) and hauled over greased poles by coolies who wear a webbed harness (visible on the leading man on the left)

Courtesy of the Forest Research Institute



FIG 8 —A SHORT LENGTH OF PANLONG, WITH A TIMBER SLEDGE

The longitudinal runners are grooved to take the poles, but the latter are not otherwise secured in position

Photo by H E Desch

Malayan Forests and Their Utilisation



FIG 9 --A LIGHT TRAMWAY WITH A TRUCK IN THE PROCESS OF LOADING
The sleepers are round jungle poles adzed square at the rail seat
Photo by H E Desch



FIG 10 --INTERIOR OF A LOCAL SAWMILL
A 72 inch circular breakdown saw with rack-bench is seen on the left while a drag feed bench is on the right The breakdown saw and four re-saw benches are belt driven from a central shaft seen at the top of the picture
Photo by H E Desch
Malayan Forests and Their Utilisation



FIG 11 —A HAND SAWYER'S DEPOT

Note the very thin saws and the peculiar type of frame used

Courtesy of the Forest Research Institute

Malayan Forests and Their Utilisation



FIG 12—A BUFFALO USED IN TIMBER TRACTION
Although massive animals, the buffalo can only handle comparatively small logs. The method of harnessing is not efficient, and the animals cannot work in yoke because of the narrowness of hauling tracks
Courtesy of the Forest Research Institute

Malayan Forests and Their Utilisation

THE JOURNEY THROUGH SYRIA

BY A. R. ADAIR, I C S

(Mr Adair, who is now serving as an Assistant Magistrate and Collector in Bihar, was one of a party of four I C S officers who, on the completion of their probation in this country, travelled the whole way from London to India in an open tourer car. They journeyed by way of Damascus, Baghdad, Teheran and Quetta and were about two months on the road.)

Our first impression in Syria was one of immense relief after leaving Turkey—for we found ourselves on perfect asphalt roads, and that in itself was a regular paradise, to which was added the fact that we could once more get what we required without having to point to our mouths and clasp our jaws or show an empty petrol tin, as the case might be. Practically everyone in Syria can speak French.

We had had so little opportunity of reading the news that we knew nothing of the sudden flood havoc in the country—and we were a little surprised to encounter lowering skies and rain on our run out from Alexandretta towards Aleppo. However, we consoled ourselves with the thought that, "As we get further south we will get out of the rain belt"—and towards sundown indeed, as we approached Aleppo, there was a pale blue streak on the horizon and suddenly the sun broke through and shone down on the city.

The great citadel bathed in the golden evening sun and surrounded by the white flat-roofed buildings of Aleppo made a most impressive spectacle, as this was the only patch of sunlight to be seen, and all around were the deepening shadows of the evening.

But it was not till we reached Homs that we learned of the floods. There, when we enquired the way to Damascus, we were told the road was out and we would have to detour through Tripoli and Beyrouth. Even on the way to Tripoli we encountered difficulties, we had a lot of water and mud to go through, and in places, where the road was washed away, we were detoured and had to drive through muddy, slippery fields, where the car went broadside as easily as forwards. We went on driving till 3 a.m., and then skidded so far down a hillside off the road that we just had to wait till daylight to get right again. So we "slept" in the car till dawn.

Still, the lovely drive along the coast road from Tripoli to Beyrouth, skirting the shores of the Mediterranean all the way,

made up for our troubles of the previous night. And in all we only lost a day, for we reached Damascus that evening.

We had heard so many conflicting reports about crossing the Syrian desert that we did not know quite how we should tackle it, and we determined to try and get as much information as possible during our short stay in Damascus.

On the one hand there was the view that it was suicide not to cross with a recognized convoy, and indeed that seemed to be the most usual method, especially for people who had no previous desert experience. But that method entailed taking on a chauffeur-guide from the Transport Company, and this we did not like the idea of doing, because we wanted to drive to India ourselves, not to be driven by a chauffeur over the difficult parts, and only take the wheel when there was a straight tarred road before us. Then again the floods had greatly affected the Syrian desert—whole villages had been washed away—some of the most reputed transport firm's buses had been marooned as much as five days, and others had not been able to get through for over a week, and there were many detours of the track to avoid flooded areas.

However, we got the opposite view from a very loquacious Frenchman who was the chief mechanic at the garage where we had put the car. According to him there was no difficulty in the desert crossing at all, and people just set out alone as a matter of course and took about two days to get to Baghdad. All that was required was to get the official documents of permission for which an inspection of the car was necessary, take on ample supplies of water, food and petrol, and set out early in the morning.

To make certainty doubly sure, a friend of his was going to drive a lorry over, starting the day before us, and a rendezvous was arranged at the French military wireless post—the last sign of civilization—100 miles out in the desert. We were to start at dawn and meet him not later than 9 a.m., then we would carry on together. As the lorry driver had been doing the crossing for fifteen years and knew the desert *comme sa poche* in the phrase of our Frenchman, there seemed no possibility of risk or danger. It was the very opportunity we had wanted.

So all was settled, the necessary documents of permission were obtained, and our Frenchman promised to have the car ready for us by 4.30 a.m. the next day. But it was not ready at 4.30, nor even at 5.30. In fact the time was 8 o'clock before we got the car, and 8.30 when we had her packed and took the "road to Baghdad."

In spite of fast driving—the speedometer needle was on sixty-five as long as the road was fair, and when it became desert track

even, we seldom dropped below fifty—we obviously were going to fall far short of our 9 a m rendezvous, and we only hoped our lorry-driving friend would wait for us. But luck was not on our side.

First we had a puncture, then one of our best tyres burst, one on which we had been relying for the desert crossing, and it was useless for anything but a "slipper" to pull on over a worn cover

These delays were the cause of an 11 a m arrival at the wireless post, and there we were told that our friend had departed sharp at nine. So we decided to push on and try to catch him at Rutbah, the "halfway" post, where we knew he intended to pass the night.

We drove on in the glare of the desert sun, over endless stretches of dead-flat, hard-baked mud and gravel. Sometimes large stones were strewn about, and sometimes the surface was of fine shingle, but always the unending glare and the vastness and utter desolation remained.

Occasionally the flat plain would give place to gentle slopes, and it was with this undulating type of terrain that mirages were most constant. They were remarkably real, too, and the cool blue lakes sometimes seemed to come almost up to the car. Having heard so much about the floods we often thought that here at last was water in reality—but it always melted away into mud and gravel as we approached.

We were not destined to reach Rutbah that night, for we had no less than nine punctures during the day, and by sunset we were still over 100 miles from our objective. There was nothing for it but to camp *in situ* in spite of vague rumours we had heard in Damascus of the fierceness of Bedouin nomads and the necessity of travelling in convoy with machine-gun protection! It was better to camp at dusk than run the risk of losing our way in the desert by attempting night driving, because the tracks were fairly easy to follow by day, but very difficult to distinguish in the headlights.

Night in the desert was cold, but to see the dawn breaking with all its splendour of colour in that vast solitude repaid us for the discomfort many times over. We had to ration both food and water carefully, for we could not know how long we would be in that waste, and by sunset of the second day we were glad we had done so, for we were again overwhelmed with punctures, and darkness overtook us still some thirty-five miles from Rutbah.

We passed many cairns of stones to mark the passage of less fortunate travellers than ourselves, but our most vivid impressions of the loneliness and dangers of the desert were received the next morning just after we set out for Rutbah. We came on a broken-

down bus which had been stranded there for four days and no help had come. The poor occupants were getting desperate, for food and water supplies were almost at an end, and but for us they might not have got help for days more. We had two lorries sent out to their assistance as soon as we reached Rutbah an hour or so later.

Supplies of water and bread were replenished there also, but more important still was rubber solution for our punctures—and there was none to be had. The great drain on our repair outfit in the previous two days had practically finished our supplies, so if our luck with punctures did not change our outlook seemed grey indeed. However, our luck was about to turn. We passed a lorry from which we obtained a tube of good solution, and with that as a reserve we felt safer, yet strange to say it was hardly required, because after leaving Rutbah we had only three or four more punctures, and we reached Baghdad on the afternoon of the fourth day of driving, with a total of eighteen punctures to our credit.

Our first sight of the Euphrates was a memorable moment. After four days of unbroken wastes of mud and gravel and sand, with no vegetation to be seen from horizon to bare horizon, or indeed from sunrise to sunset, the mirage we saw of palm trees on the sky-line seemed completely unreal—but when we reached that horizon we saw in reality what before had been but a mirage—an unbroken line of palms, and even more strange, a felucca sail which seemed to rise from the desert itself. At first the sail and the palm trees were all that showed above the undulating surface of the plain, but as we approached we saw the river—an abrupt ending to 500 miles of arid desert—and on its banks an abundance of vegetation.

From Ramadi on the Euphrates on to Baghdad was quite a short run, and an asphalt road most of the way, so once we had reached Ramadi, which is the Iraqi Customs station, we had really completed the desert crossing and were able to heave a sigh of relief.

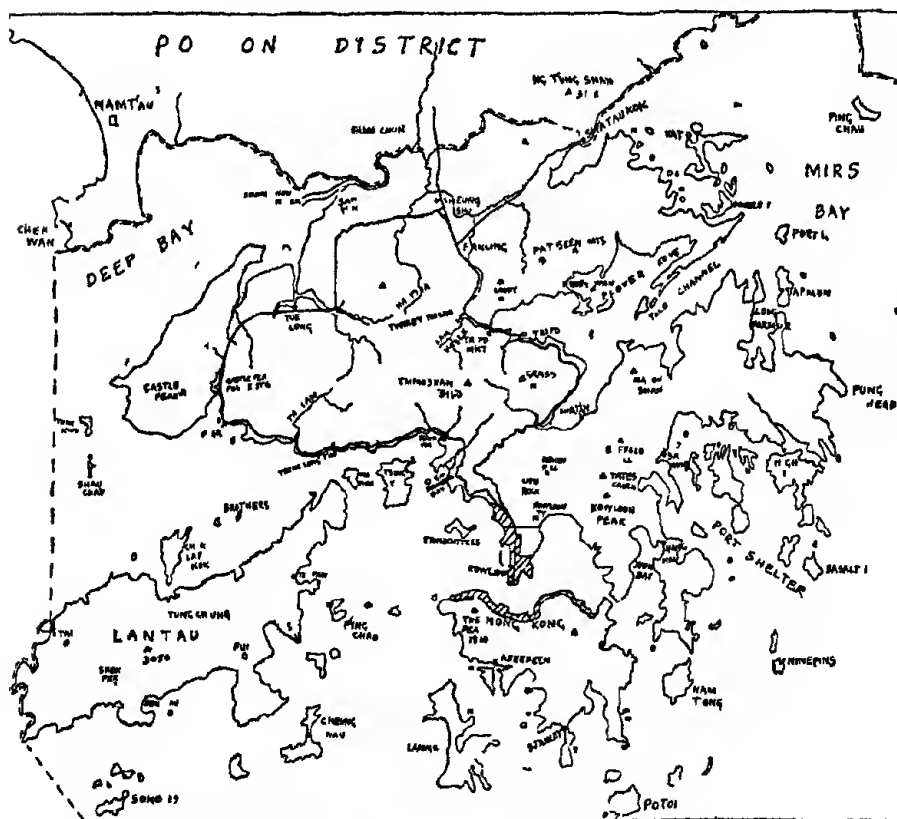
Though it had been force of circumstances which made us cross the desert alone we were very glad to have it behind us, because there was always the uncertainty. What would we find next in the way of difficulties?

This feeling was all the time fostered by the thought "There must be some reason for all this convoy business and official permit and checking-in before leaving—if there is no real danger then why should people pay £10 to have a chauffeur-guide?"

The general attitude of anyone we met increased this feeling of uncertainty. Once, on the first day, when mending a puncture, a transport car stopped near us, and the driver seemed sur-

prised that we were travelling alone and said: "Isn't that rather dangerous?" Again at Rutbah the same note was sounded "What, alone, and never done the desert crossing before? A lot of people have been lost in this desert!"

Yet actually we were never in any real danger of losing our way—once when we came to a flooded area we had some difficulty in picking up the tracks of the detour, but half an hour's cruising about found us on the main track again and forcing towards Baghdad. More than anything else, I think, it was our principle of driving only by daylight that kept us from losing our way, and though necessarily our driving hours were thereby shortened and the time for the crossing increased, it was better than running the risk of getting off the route and going round in circles till the petrol ran out, which is, I believe, what happens if once you miss the track



SKETCH MAP OF HONG KONG AND THE NEW TERRITORY
(See article on next page)

 Built-up areas

HONG KONG'S NEW TERRITORY ITS BEAUTY AND INTEREST

By W SCHOFIELD

(Of the Hong Kong Civil Service)

THIS article does not pretend to do more than point out a few of the beautiful and interesting things to be seen in the little corner of South China known as the New Territory of Hong Kong to do them full justice would require a volume

A glance at the map on page 733 shows what the New Territory is a land of hills, islands, and fiords forming part of the mountain chain which occupies the coast of South-East China, and offering in every direction views of mountain, sea, and plain of the greatest diversity and beauty, to which two thousand years of history and tradition give human interest, for not only is there the interest natural to Westerners in the oldest theatre of European overseas enterprise in China, but the interest of Chinese cultural and political expansion southwards, and, I can now add, that of the remains of pre-Chinese tribes and cultures known to have existed in and near Hong Kong

Let us suppose that we have taken a car from the Star Ferry, Kowloon, opposite Hong Kong We reach the beginnings of the New Territory close to Prince Edward Road, where the first signs of Chinese cultivation appear Much of the land is raised in level for building, this is cultivated on permits from Government subject to payment of fees the area not raised is held on 75-year Crown leases South of the Kowloon range, which here rises directly in front of us, little rice is grown, market gardening and flower growing are the rule, and the wet fields produce the "Portuguese vegetable," or watercress—a larger and coarser plant than ours Along the coast lie a number of shipbuilding yards, which turn out not only junks but launches, and even repair small steamers, the sloping beach of Ch'eungshawan (Long Sand Bay), sheltered from the south-west wind by Stonecutters Island, and near enough to Hong Kong to get raw materials easily, has fixed the industry there, besides, land purchase, impossible to such under-capitalized firms, was needless, as they got their areas on yearly permits.

At Ch'eungshawan the road divides: the right road goes to Taipo and the centre of the Territory, the left to Castle Peak and the west. Taking the Taipo road, we begin to climb the foothills

of the Kowloon range. The west end of the range is, as every cutting shows, of granite, which is believed to have reached its present position about the time that the English chalk was being deposited. It then lay deep underground, forming a low dome of irregular shape, and cooled and solidified very slowly, so that its crystals grew large. Near the top and edge of the mass it cooled faster, so the crystals were smaller and the rock became harder. As the rocks above the granite wore away in the course of ages, the granite was exposed, and decayed. The coarser rock rotted faster than the finer, which was strengthened by the edges of the disappearing "roof" rock beside and above it. This roof rock still exists on Kowloon Peak and Tate's Cairn, away to the east, Beacon Hill and Lion Rock retain some of the finer-grained granite on their summits, while the remarkable Lion's Head Rock on the latter, and the Amah and Child Rock in Shat'in valley (Plate I), probably owe their shapes to accidents of joining and weathering.

As the granite does not decay uniformly, but chiefly along cracks, the undecayed rock between them remains as boulders, often of immense size, when the softened rock round them has been washed away by rain. This is happening all over South China, and is proof of the former existence of vast jungles, which alone could have prevented the washing away of decayed rock. When man cleared off the jungle, this protection disappeared, and the frequent masses of boulders and areas of bare rock-surface on the granite hills testify to enormous soil destruction.

After passing Kowloon reservoir, an artificial lake set amid pine-woods and fringed with long bays and headlands, the car enters Shat'in valley and runs downhill to sea level. This valley, where between March and October the earth is carpeted with the vivid green of flooded rice-fields—rice is the chief crop of the New Territory—is an arm of the sea, which flooded it at the time of the great sinking of the Pacific coast, and is now receding slowly before the sand and gravel from the two mountain masses on either side. These have formed the "sand fields" which give the valley its name. It is a corner of the fiord called Tai-po, or Tolo, Harbour. Across it can be seen Turret Hill, the Buffalo Peaks, and, finest of all, the 2,200-foot Ma On Shan or "Saddle Mountain" from its shape (Plate II), its steep ridges and vast precipices make it one of the most striking mountains in the Territory. Its base is of granite, its upper half of the tough lavas and ashes which form most of the highest mountains in the Colony. Among these are found many fragments of the still older sandstones, shales, and cherts which alone offer fossil-hunters a chance of success in Hong Kong. Here, too, is the only commercially workable iron ore in the Colony, a steep road leads up to the mine from sea-level, and

piles of the ore lie by a small jetty From the summit can be seen wonderful views of mountains, islands, and straits, while on the slopes the botanist can find rare and interesting plants, though they will cost him a hard climb

Shortly before reaching the sea we cross the diminished waters of the Shing Moon river, blocked three miles upstream by the highest dam in the Empire to furnish water to Hong Kong, completed in 1937 On a hill north of the river is the unique Mission to Buddhists called Tao Fong Shan, with its beautiful church in Chinese style, roofed with tiles of the same glorious blue as those of the Temple of Heaven, its font is a lotus-shaped bowl surmounted by the Cross, and on its wall hangs a rubbing of the great Christian inscription of Si-an

For three miles the road keeps at sea-level beside the railway Under the hills across the valley lies a most interesting walled village, with towers, loopholes for rifles, and gateway all complete, and all quite modern, put up only ten years or so before the Territory was leased to Britain This walling, a common expedient in former years, is chiefly practised by the Cantonese-speaking settlers who in the Sung dynasty moved into the plains and valleys and were the first Chinese to populate the coastlands in large numbers A walled and moated village is a most picturesque feature of the countryside, especially if within it there rises a tall tower, reminding the Westerner of a donjon keep, with narrow barred openings for windows and a battlement atop This structure is simply the local pawnshop, where the countryside raises its capital and keeps its winter coats or its summer silks, according to season, as collateral One such shop can be seen at the village of Tai-po T'au, at the head of the Tai-po valley

The road now recrosses the railway and rises to nearly 300 feet At the top of this rise it leaves the granite for the first time and runs on to sedimentary rocks forming part of the "roof" covering the great Taimoshan igneous mass A new arm of the fiord opens to our right. it stretches from the mouth of Shat'in cove eastward to Mirs Bay, beyond which, framed by the mountains and headlands on each side, is caught a glimpse of the shore of China. To south are the mountains surrounding Long Harbour and dividing Tolo Channel from Port Shelter, to north is a long ridge forming a peninsula which partly encloses the lovely inlet of Plover Cove Above the cove rise the Pat Seen hills, another igneous mass, on the western half of which can be seen layers of sandstone, forming its roof and capping the hills. In the very middle of the harbour, Centre Islet is noteworthy for its grass, which is always green no matter how dry the weather may be, thanks to the composition of its soil.

Tai-po, the name originally applied to the plain at the head of



KOWLOON RANGE FROM THE NORTH, WITH LION ROCK AND THE AMAH AND CHILD ROCK, SEEN FROM
ACROSS SHAT IN VALLEY

Hong Kong's New Territory

PLATE II



THE SHORE BY TAIPO MARKET, LOOKING EAST SADDLE MOUNTAIN IN THE DISTANCE



NORTH END OF LAM TS UN VALLEY, SHOWING SHAMCHUN RIVER TERRACE
AND STEEP SLOPE OF CENTRAL TERRACE IN FOREGROUND IN THE
DISTANCE ONE TREE PASS ON CLOUDY HILL

B



PREHISTORIC SITE OF SÔ KON WAT, LOOKING SOUTH, MOTOR ROAD IN
THE MIDDLE DISTANCE WEST BROTHER AND LANT'AU IN BACKGROUND



CASTLE PEAK, LOOKING SOUTH WEST FROM THE MOTOR ROAD RICE-FIELDS IN THE FOREGROUND

Hong Kong's New Territory

the western branch of the harbour, is now that of the railway station 2,000 yards east of Taipo Market, the economic centre of the country bordering the harbour, and the administrative centre of the northern district of the New Territory. Much of the market town is new, built on a reclamation made in 1912. The river beside it can float junks, which cross the shallows at high water to load and unload by the market. but launches and small steamers can only reach Taipo pier, for the river, which comes out of the Lam Ts'un valley a mile west of the market, has filled the head of the harbour with sand for a mile out from shore. It has a remarkable course, it rises on the north flank of Taimoshan, is joined by a stream on its left coming from the pass at the head of the valley, and enters the broad lower half of the Lam Ts'un valley. This is floored by sandstone, with the Taimoshan mass to south and the Turret Rock mass to north, so that it must be an old valley created by the raising of these two great domes of rock. Just below the road, near the ancient three-span stone bridge, the river turns from north-east to south-east, cuts through the low hills, and enters Taipo plain and harbour. But there is ample evidence that in former ages the river went straight on north-east and turned north to Fanling, joining the Shamchun river, which forms the boundary of the New Territory. The Taipo stream must have been a little torrent like those near Shün Wan, across the harbour, but it cut backwards through the hills and "beheaded" the old stream, drawing off its water and finally deepening its bed 60 or 70 feet almost up to its source. The old bed survives as terraces both in the middle of the valley and on each side, and the whole thing is as clear as a model. It can be seen by walking 20 or 30 yards up the low bank west of the road at Wai T'au (Plate IIIa).

This spot has another interest. In the banks and cuttings beside the road are found fragments of the high-fired pottery, ornamented with criss-cross patterns of raised lines, and "double F" patterns of impressed lines, used by the Bronze Age people before the Han dynasty. It lies about two feet below the surface, so evidently soil has crept downhill in the course of ages and buried it, aided by the normal process of soil circulation carried on by termites and burrowing insects. Evidently there was a clearing and a settlement here, 60 feet above the stream, in the broad valley which it had abandoned.

The road now bends north between Turret Rock and Cloudy Hill, past Tsu Hang village, where in 1912 a large hoard of coins dating to the Southern Sung dynasty—about A.D. 1100 to 1250—was dug up under a house; evidently buried about the time of the Mongol invasion in A.D. 1240.

Passing into the Fashing plain, lower hills and wider expanse

of verdant rice-fields, stretching away to the border and beyond, meet the eye.' These hills are often of sedimentary rock, usually sandstone and shale altered by earth movements and mountain-building into quartzite and mica-schist. These, broken up by an infinity of planes of movement, weather into masses of loose rubble on the steeper hills, held together only by shrubs and coarse grass, in 1912 the broken-up white quartzite so littered the Fanling golf course that it was most difficult to find a ball among the fragments, and caddies drove a thriving trade in lost balls!

This northern plain is a comparatively dry area, for this reason we see a new crop, the sugar-cane, growing everywhere. It is almost entirely confined to this part of the Territory.

The road passes by Fanling (dusty ridge), noted for its lichee orchard, and near Sheung Shui (upper water), where the new road to Canton branches off. Not far from the junction there are signs that a porcelain kiln once existed there, probably 300 to 500 years ago. To left, between the mountains and the road, lie the rolling parkland and forests which Government and the Golf Club have created out of rice-field and hill to make the finest golf course in the Far East. To south-west of it lies the low pass called Ha Ts'ia Gap, from the village below it, whose name means "lower slope", its top is hardly 100 feet above the general level of the plain, though the hills each side rise over 1,800 feet.

Beyond San Tin (new fields) there stretches the wide plain bordered by the largest tidal marsh in the Colony, beyond which again are the waters of the strangely named Deep Bay. It certainly is a deep recess of the coastline, but is quite the shallowest arm of the sea in the Colony's waters. Mangrove bushes, sometimes six feet high, cover the flats, which are the resort of numerous wild duck and other waterfowl, and offer first-rate shooting. Beyond, the low neck of sand on which Namt'au stands can be seen, joining to the mainland the rocky headland on which is the great Buddhist temple of Ch'ekwan (red bay). The shores of Deep Bay are parcelled out into oyster beds, their owners, living in Chinese territory, pay fees to the British district officer, whose jurisdiction extends to high-water mark as far as a rocky point near Ch'ekwan.

Namt'au is the capital of the district of San On, or Po On, which used to include Hong Kong and the New Territory, and was set up in 1560 to deal with the pirate menace, particularly from the Japanese. Previously the area had been a portion of the Tung-kwun district, which lies to the north.

The road now runs south to the rich plain of the Pat Heung (eight villages), the home of the Tang family, the leading clan of the New Territory, and the chief landowners in the countryside, with a history going back to the Sung dynasty. Above it, on the

slope of Taimoshan, is the Ling Wan monastery. The villages are walled and moated, one has a very handsome pair of iron gates. The streams flowing into Deep Bay here have sufficient water to make them good harbours for junk traffic, so that in the next stretch of plain, where the road runs west again, we find a large country town, Yuen Long, with a regular junk trade, it is also a bus route terminus, and the chief market town of the north-western New Territory. The abundant water in the hill streams and the flatness of the plain make this the richest agricultural area in the Colony, and a special Land Office has been put up on a hill near by, at P'ingshan, to deal with its land business.

Once past P'ingshan the car has in front a range of hills, low and mainly of sedimentary rock on the right, higher and of granite on the left, culminating in the lofty hill Castle Peak, or Ts'eng Shan (green mountain) (Plate IV), a centre of Buddhist legend, with a monastery 700 feet up its east face. It is mentioned as Mount T'un Moon in the account of the travels of the monk I-ching, who touched at Canton on his way back from India in A.D. 695. T'un Moon is still the name of the district at the foot of the hill, where once there was a Chinese coastguard station. The name means "garrison gate" or "channel", the deep-water channel to Canton passes beside the hill. There are three peaks on the hill, which has a form as distinctive as Saddle Mountain. The name "green mountain" comes from the fresh green grass on its eastern slope, where the soil is of sedimentary rocks instead of barren granite. Wolframite has been mined in the Castle Peak range, and the 20-year-old adits are still visible.

To left of the road, along the foothills near the police station, many polished stone adzes of prehistoric times have been found, proving the valley contained settlements. The pottery found with them is of ancient type. One settlement was, however, of historic date, for the pottery is of types found in Canton and dated to the Han dynasty, and no adzes are associated with it. This may possibly be a relic of the ancient garrison.

By the village of San Hui (new market) we reach the sea shore again, and running off the sandstones and shales of the valley, enter granite country. Here begins the series of bathing beaches that make the next length of road a combination of the Lido and the Corniche. Just off shore is the sea route to Canton, and beyond it, displaying its full length and its lofty peaks, lies Lant'au, largest of all the Colony's many islands. In the west can be seen the three peaks and three isthmuses of the curiously shaped Shau Chau (guard-station island), in front of Lant'au, the East and West Brothers, known to the Chinese as the Little and Great Whetstones, and Ch'ek Lap Kok—Chulukok of the charts—which creates the harbour of Tung Ch'ung, the former administra-

tive and military centre of Lant'au, a large island, but very thinly inhabited

A little beyond the branch road to the pier we pass another fine bathing beach, behind which is a gravel cliff cut away by a stream; two feet from the surface are fragments of prehistoric pottery of two types, the soft and the coarse. the latter is decorated with string impressions applied with a bat or roller. This is one of the earlier of our prehistoric sites.

At the next large bay, called Sō Kon Wat, are a practice range for artillery, two high banks of sand marking the modern and the ancient beach, the latter 250 yards inland from the former, and a noteworthy prehistoric site (Plate IIIb). The two beaches are among the many proofs to be seen on this coast that the sea level has fallen 10 or 15 feet. This can only have happened a few centuries ago, for dead oysters and corals are still found here and there in sheltered corners a little above high-tide mark. The prehistoric site is on a low hill, partly grass-covered, and has yielded hard and glazed pottery, pieces of quartz and stone rings, centres knocked out in ringmaking, masses of chips, lumps, and flaked discs of quartz, a few partly made cylindrical beads of green stone, and even a bronze arrow-head. All these lie scattered on the surface, or buried at a few inches depth.

This valley, like most other valleys along this stretch of coast, runs north-east and south-west, agreeing with the general structural trend of the country. A little further on, a smaller valley contains a military road. By walking up it the long, beautiful Tai Lam valley is reached. It is, like Castle Peak and Lam Ts'un valleys, formed by the uprising of domes of molten rock, in this case granite, inside the earth's crust each side of it. The result is a long straight valley 100 to 180 feet above sea-level, with a pass at its north-east end no more than 250 feet high, beyond which a steep slope leads down to the plain around Yuen Long. Out of its south-west end flows the river, making two right-angled turns and dropping over two waterfalls before reaching the sea at Tai Lam Ch'ung. The river is thus only just beginning to deepen its valley.

Crossing its estuary by two long bridges, we climb a hill and round the steep rocky headland of Brothers Point, where loss of soil has left great areas of hillside bare down to the very rock. The next village, Ts'eng Lung T'au (green dragon's head), contains a Government telephone call office, a prehistoric site on a hill shoulder, and boats which can be hired to carry passengers to the island of Ma Wan opposite, or to Lant'au beyond it. The name of this village refers to Chinese geomancy: a hill ridge east of a site with a south-west aspect is a "green dragon," and that to west is a "white tiger." The "head" is the rocky headland to east of

the bay. Our "Worms Head" and "Great Ormes Head" belong to very much the same order of ideas.

The next village we reach is Sham Tseng (deep well), where the Hong Kong Brewery and Pure Cane Molasses Co. are established. Much of their land has been acquired from the villagers, not by purchase, but by lease, rent being paid regularly, thus giving the peasants an income instead of a lump sum, which might be squandered, stolen, or lost, and avoiding the trouble caused by some local Naboth refusing to give up the inheritance of his fathers.

Just before reaching the next village, Ting Kau, we leave the granite and enter the south-west corner of the Taimoshan igneous mass. The road runs alongside the strait between Ts'ing Yi island and the mainland, this strait is another valley of the same type as those described earlier, floored by sediments and flanked by upraised igneous rocks, for the sediments are exposed at two or three places both on the road and on the island shore.

The deep channels between Ts'ing Yi and the mainland offer good harbourage to coasting steamers and tankers, but the innermost bay, Ts'un Wan, is also named rightly Ts'in Wan (shallow bay). The place so named is a small town, unwalled, with shops and a market, the centre of the whole district from the south corner of Gindrinkers Bay to Ts'eng Lung T'au, and inland to the top of Taimoshan. This district, with New Kowloon and a district round Junk Bay, is the mainland portion of the Southern District, under an officer whose office is in Hong Kong, the natural centre of his district.

One crop very common in the Ts'un Wan area is seldom seen outside it—namely, the pineapple. It is grown on the steep hill slopes, generally among pine trees, which help to hold the otherwise unprotected soil together, even so, washouts in pineapple patches are not uncommon. For this reason they can only be grown on compact, clayey soil, for the loose gravel of decayed granite would be washed away by the first heavy rains unless terraced. Shing Moon valley, above the reservoir, used to be a centre of this kind of cultivation. Now the land has been resumed by Government and the people have moved to other parts of the Territory, and have started growing pineapples near their new homes.

On entering the Ts'un Wan plain the first noteworthy object we pass is the grave of the ancestor of the Tang family, marked by two octagonal pillars which stand just above the road. The hillside around has been laid out as a garden by the family, and the grave is considered to possess better "fung-shui" than any other in the Colony. Above and below it is a prehistoric site, with both coarse and high-fired pottery, and other objects. Rounding a little hill, we cross a wide stream, and about 300 yards up this

is a group of mills worked by waterwheels these work wooden hammers, which pound clay and sandalwood for making incense sticks, the clay prevents rapid burning when mixed in the right proportion with sandalwood powder. A little further on, near Muk Min Ha (under the cotton-tree) is a big stream which has built up a delta of sand and boulders washed down from Taimoshan, and much of Ts'un Wan is built on such material.

By the police station—such stations are always built near important villages—is a branch road to the famous Shing Moon reservoir, rising through mountain scenery of ever-increasing grandeur and beauty to the valley where it lies, deep in the folds of the Colony's greatest mountains, Taimoshan, Grassy Hill, Needle Hill, and Smugglers Ridge, and soon to become a forest reserve. The main road keeps on to Ha K'wai Ch'ung, the group of villages on Gindrillers Bay. The hilly peninsula dividing this bay from Ts'un Wan has unusually red soil, marking, like the soil by Tai-po Market, the margin of the Taimoshan igneous mass, which is of different composition from the rest. On its south side is a prehistoric site in a sandbank behind a beach. It is one of the later sites, for a stone mould for casting axes was found there.

The road now climbs the ridge of Lai-chikok Pass, the lowest point of the Kowloon range. Looking back from near the top, a last view is caught of Hong Kong's largest mountain, its whole majestic south flank rises before you, clad below in pinewoods and varied by the square patches of pineapple, above in grass, green in summer, purple-brown in winter, its great flanking ridges east and west rising to lofty heights, and its base planted in the island-studded sea.

The journey is likely to end towards evening. If so, one last spectacle is offered to the traveller: the view of Hong Kong and its harbour in the twilight, with the lights rising towards and mingling with the stars—a fitting climax to such a feast of beauty as is worth travelling half round the world to see

THE CONFLICT BETWEEN JAPAN AND CHINA

BY CHING-CHUN WANG, PH D , LL D

(Former Director-General of the Chinese Eastern Railway)

CHINA'S CHANCES

TO-DAY China is engaged in a conflict with a Power which, militarily speaking, is very much stronger than herself. Nobody who has personal knowledge of China would describe her as being warlike, or as prone to engage in military adventures. It is China's natural tendency—a tendency, in truth, which is not without its weaknesses—to compromise whenever she can. But China was compelled, by bitter experience, to realize that a point had been reached at which compromise would, in fact, have left her with few of the things for which compromise was worth making. As General Chiang Kai-shek solemnly declared last year, "We shall not relinquish peace until there is no hope for peace. We shall not talk lightly of sacrifice until we are driven to the last extremity which makes sacrifice inevitable." To-day China is fighting for her national existence and for the purpose of saving her people from Japan's pan-Asiatic schemes.

But what the anxious world wants to know is this: What are Japan's chances of success in "beating China to her knees," and what would be the consequences should Japan succeed? In order to answer these questions we must dispassionately examine the whole situation and match the factors that are against with those that are in favour of Japan's success.

First of all the Chinese, although "hopelessly inferior in equipment, are resisting the Japanese attacks with astonishing resolution and courage in the face of immense losses and the breaking of that resistance is still far distant yet." China has the man-power, and the events of the last twelve months have proved that she also has the courage and the endurance. With a moderate supply of munitions China feels confident of being equal to this task that has been forced upon her. Moreover, all information seems to indicate that either the invaders will be gradually worn down or both belligerents will become totally exhausted.

On the other hand, Japanese hopes of a quick victory were disappointed months ago. Their military plans have been much delayed. The Japanese army occupy most of the railways, but they exercise little control beyond narrow strips of territory along these railways. Their lines of communication are constantly interrupted, while their garrisons are often menaced. They have won battles but have secured little that is of decisive value.

RUSSIA

Next to China, Russia would suffer the most should Japan succeed in breaking China's resistance. Whether as Empire or as Soviet Union, Russia has been intensely interested in the Far East ever since the days of Peter the Great. With her enormous stretches of land and sea frontier in the Far East Russia cannot divest herself of that interest. On the contrary the Soviet Government has recognized the importance of its Far Eastern possessions more than ever before, as shown by the fact that in the course of the first Five-Year Plan it sank in Eastern Siberia more industrial capital than the Tsarist Governments had done in the whole of Russian history.

Russia must seize the earliest opportunity to resist Japan's continental adventures because she knows Japan's designs on Eastern Siberia. Japan's large expeditionary force sent into Siberia in 1919, her support of Semenov in opposing the Soviet in 1920, and her prolonged occupation of Nicolaivsk during 1921-23, to mention only a few events, must have demonstrated clearly to the Russians that Japan's "lifeline" after having moved steadily onward from the Japanese channel through Korea and the Liaotung Peninsula will not voluntarily stop at the borders of Manchuria and Jehol.

The Japanese occupation of North China, which is already far advanced, will soon form a ring around Outer Mongolia and lay bare a thousand miles of Siberian frontier. By a glance at the map anyone familiar with Far Eastern affairs will be able to realize that Russian territorial possessions east of the Baikal will be at Japan's mercy the moment Japan's position in North China is consolidated.

If Russia can help China to stop Japan's invasion the risk of the concerted German-Japanese attack on herself, which is her nightmare, may be averted. Moreover, if Russia ever finds herself the object of such an attack, which has become more apparent since the German-Japanese agreement of 1936, it will be a great help to her to have the collaboration of China. The fighting during the last twelve months shows that even from a purely military point of view help given to China will bring adequate returns. On the other hand, insufficient support would enable Japan to consolidate her long-planned wedge between China and Russia and would make Chinese assistance not available when it is needed. Such a situation would enable Japan to hold Germany and Italy, with Poland and Hungary, as trump cards. Then the U.S.S.R. would find herself with a hand difficult to win.

The Soviet seems to realize fully the dangers of Japan's plan of expansion. We need only recall Stalin's words to Mr. Roy

Howard a little over a year ago when he said in unmistakable terms that a Japanese attack on Outer Mongolia would lead to a Soviet-Japanese war. There is hardly any doubt that those words still hold good. But Japan has already attacked and occupied Inner Mongolia, and nobody can tell where Inner Mongolia ends and where Outer Mongolia begins. If Russia is forced by reasons of her own or otherwise to play a waiting game and refrain from taking action, as a policy, until she is attacked she would be playing right into Japan's hands, for Japan will see to it that Russia would only be attacked when the time for attack would suit Japan best, and Russia worst. Indeed, such a waiting policy would be like in a game of bridge to tell your opponents beforehand what your trump cards are and precisely when you will play any one of them.

Should Japan succeed in breaking China's resistance, the only step that could prevent the consequent conflict between Japan and Russia would be for Russia to surrender her rights east of the Baikal, because Japan could never feel secure with the Maritime Provinces in the hands of the Russians. In fact, nothing is so disquieting to Japan as Vladivostok with its concentration of Soviet bombers, which the Japanese consider a constant danger to Japan's back door.

Even the combined Anglo-American fleet is less annoying to Japan than the Soviet Air Force in Eastern Siberia, because important areas of Japan are within easy range of Soviet bombers operating from that region. Of all the eventualities one thing is certain: as soon as Japan's position in China is consolidated she would seize the first opportunity to secure control of the Maritime Provinces so as to prevent that area from being used as air bases by Russia or any other nation.

These brief references lead to the inevitable conclusion that Russia's own interests demand that she must act. The only reason for her hesitation seems to be (1) she is much weakened by her political purges, (2) she might not be too confident of internal solidarity in case of war with Japan, and (3) she is doubtful of the ultimate attitude of Great Britain and the U S A. The elimination of any one of these three weak points in the scheme of the Soviet's plan would most likely see Russia taking an active part. When she does so she would also be fighting the battle of the Western democracies.

GREAT BRITAIN

Next to Russia Great Britain has the most genuine reasons to be alarmed by the Japanese invasion of China. British interest in the Far East is as vital as it is extensive. Her investments and shipping enterprises dominate the whole Chinese coast as well

as the Yangtze Valley. Her steel, cotton and woollen goods occupy an enviable position in China's growing market, to say nothing of Hongkong, Singapore, India and her South Sea possessions. These extensive British interests in the Far East in general and those in China in particular are increasingly threatened by Japan's invasion.

It is clear that Japan is planning to take over Britain's place in the Far East, which is badly needed by Japan's rapidly expanding trade. Much headway has already been made, in spite of the widespread prejudice against things Japanese which prevails as a direct result of Japan's military activities in China. The inroad made by Japan into Britain's place in the Far East is only checked by British prestige, laboriously built up during the last hundred years, and the goodwill won by Sir Austen Chamberlain's friendly gesture in 1924, Lord Willingdon's mission to China in 1926, and Lord Lytton's far-sighted statesmanship in 1932.

Australia is becoming increasingly alarmed by Japan's expansionist activities. To alleviate Australia's fear Tokyo often has to issue official denials of any aggressive designs in Australia. In September, 1936, the Japanese Foreign Office even took the pains of establishing a South Seas Bureau for the special purpose of putting an end to the talk of Japanese territorial designs. This step, however, was followed two months later by the German-Japanese agreement, which was reported to involve the Dutch East Indies with a common frontier with Australia's New Guinea. This agreement naturally has not helped the Australians to accept Tokyo's assurances wholeheartedly.

It is now generally recognized that the failure of Great Britain and the United States to co-operate in stopping Japan's invasion of Manchuria in 1932 is largely responsible for the Abyssinian and the Spanish catastrophes, both of which immediately affect Britain's safety. Further weakening of the forces of collective security by allowing Japan "to beat China to her knees" would do incalculable damage to Britain's position East of Suez. As Lord Curzon* once said, "The fate of Great Britain will not be decided in Europe but on the Continent from which our forbears once came and to which their descendants returned as conquerors." Indeed, several English publicists observed recently,† "If Britain were to shirk all share of responsibility for the restraint of violence in such a case as China's the moral and material means of protecting this sprawling Empire against violence will not be

* Quoted in the *Spectator*, August 27, 1937, p. 339.

† *Vide* W. Arnold Forster's letter in the *Manchester Guardian*, September 30, 1937, Sir Norman Angell's article in *News Chronicle* of October 1, 1937, and Sir A. L. Rowse's letter in the *London Times* of September 3, 1937.

forthcoming." Therefore, quite apart from its moral aspects, Britain should and must oppose Japan's subjugation of China.

The recent establishment of a separate department in the Japanese Foreign Office to watch developments in the Dutch East Indies confirms the opinion frequently expressed in Holland that a new stage has been reached in Japan's southward policy. The possession of the large Chinese island of Hainan, about the size of Sicily, south of Canton, long coveted by Japan, forms one of the primary objectives of Japan's war on China to-day*. Once the Canton hinterland and Hainan are in Japan's hands the position of Annam and Hongkong would be untenable. Therefore, France and Holland, no less than Great Britain, are most anxious to prevent Japan's control of China.

Even Germany and Italy, members of the Axis, are by no means enthusiastic for Japan's expansion on the Continent, for no ideological sympathy with Japan could comfort either Germany or Italy for the loss of their Chinese market either through exclusion from it by Japanese competition or by the effects of Japan's armies of invasion†.

THE UNITED STATES

Last but not the least, the United States has serious reasons to be alarmed by the Japanese invasion of China. Besides the violation of the Nine-Power Treaty and the Kellogg Pact, both of which were sponsored by her statesmen, America's interest in the Pacific is substantial. Her longest sea-coast is on the Pacific. Hawaii, which is American territory, and the Philippines, which are under American protection, are on the Pacific, and these islands form the front line in the way of Japan's expansion, while Alaska is nearer to Japan than most other territorial possessions of the Western nations. Though the United States plan to withdraw from the Philippines, this withdrawal will take many years to come into effect, and before the completion of that withdrawal all manner of things may happen in that part of the world. Moreover, after having wrested these islands from Spain and ruled over them for so many years with such excellent results, can the United States permit them to slip into Japanese hands even after her withdrawal? Will not such a retreat so weaken her prestige and so enhance Japan's as to expose Hawaii and parts of South America to some untoward consequences?

For generations American foreign policy has been based on

* *Vide Sunday Times*, London, October 10, 1937, the *Daily Telegraph* of June 15 and July 5, 1938, and the Debate in Parliament concerning the "threat to Hainan," in the *London Times* of June 28, 1938.

† *Vide* report of the *Daily Telegraph's* Berlin Correspondent in the *Daily Telegraph* of January 27 and 29, 1938.

the Monroe Doctrine and the Open Door. Although different in name the two doctrines in spirit were originated to serve the same purpose* of affording protection to her neighbours to the south and to the west so that they may develop peacefully and serve as open markets. By its provision for China's territorial and administrative integrity, the Nine-Power Treaty has gone a long way further in bringing the Open Door policy to the level of the Monroe Doctrine.

Apart from the consideration of the trade possibilities around the Pacific which to her are of paramount importance, and her traditional desire for peace and fair play which accounts for her greatness, the United States would consider the attack on any South American nation by any Power as a threat to her own safety. In addressing the Brazilian Congress in the summer of 1937 President Roosevelt undoubtedly voiced the opinion of all good Americans when he stated in unmistakable terms that "We cannot countenance aggression from wherever it may come. . . ."

When the open door was first introduced probably the commercial and moral considerations were uppermost in the minds of its founders. The development of aviation as an instrument of war, however, has raised the safety factor of the Open Door policy to the same level as that of the Monroe Doctrine. A rational examination of the map will at once reveal that the threat to the safety of America could not come from Europe but from Asia. The Atlantic makes it quite impossible for any European nation or combination of nations to prepare sufficient naval or air forces to attempt an invasion of America. On the Pacific side, however, America is not nearly so invulnerable. The Behring Strait, which separates America's back door at Alaska from the mainland of Asia, is not much wider than the English Channel. Weather conditions in that region are known to be not unfavourable to flying during a greater part of the year. It will not require much imagination to visualize that with Eastern Siberia in the hands of a hostile militaristic nation, much annoyance if not trouble could be expected at America's back door from air forces using that region †

The reason why the average American would almost at once take action against any invasion of Argentine or Chile but would at the same time remain complacently indifferent to aggression

* See Dr Stanley K. Hornbeck's able article in *Amerasia*, August, 1937, which contains this significant passage "This country has but one foreign policy, a policy animated by principles which are applicable—and which it seeks to apply—in relation with all countries, everywhere."

† The map of Mr H. Hughes' recent round-the-world flight must have made the close relationship between Alaska and Eastern Siberia more vivid than ever before.

that threatened Eastern Siberia must be largely due to the fact that America and Asia always appear on different pages of maps. This printer's habit seems to have created the impression that the two hemispheres are on separate globes and that Cape Horn is nearer to Texas than East Cape is to Alaska.

Many important American leaders, however, have long looked at the situation differently. Among others Senator Pitman and Senator Lewis have on more than one occasion warned the American people of the dangers from the back door of Alaska. American strategists have been quietly paying increased attention to the Aleutian Islands. President Roosevelt himself seems to be specially conscious of the back-door situation, as shown by the fact that he has seized the opportunity of each one of his recent goodwill trips to Canada to discuss the United States-Alaska highway.

It is only natural for these American leaders to show equal concern regarding the back door in the north as well as the front door in the south, because it is inconceivable that the United States would only show concern about attacks of her neighbours in the western hemisphere simply because they happen to be situated on a piece of land which, ages ago, happened to be named America, but would ignore much more wanton attacks on other neighbours much nearer to her own boundaries simply because these nearer neighbours happen to be situated on another piece of land bearing a different name. When the whole situation is taken into consideration, one can perceive that President Roosevelt must have had America's back door in mind when he said at Chicago last winter:

"The peace-loving nations must make a concerted effort in opposition to those violations of treaties and those ignorings of humane instincts which are to-day creating this international anarchy and instability from which there is no escape through mere isolation or neutrality."

Apart from moral and economic considerations, America is a Pacific Power whose defences by virtue of her geographical position are closely linked with the fate of Eastern Asia. President Roosevelt's attitude as shown in his Chicago speech has done much to rally the forces of peace and of international justice to a cause which in its Far Eastern aspect is profoundly relevant to the future of the United States.

CONCLUSION

At long last the world is aroused from its dangerous complacency. People everywhere realize that it is to the interest of the whole world—and not least of Japan—that the wasting strife

should be brought to a speedy end. At Chicago President Roosevelt voiced not only the feelings of the Americans but the conviction of all right-thinking people when he urged as a matter of common sense that Japan's military adventure should be quarantined.

China is the first to suffer from this epidemic of militarist fanaticism because she happens to be the nearest neighbour of Japan. China is fighting this epidemic in the face of great odds and enormous sacrifices, but she feels confident to have the will and the courage to bring the momentous struggle to a successful end. She does not ask her friends to share the sacrifices in the loss of life and property. All she asks of the peace-loving nations is (1) to let her have a reasonable amount of arms and munitions which they can easily spare, (2) to stop buying things Japanese. China asks for arms, because determination and sacrifice alone cannot resist for ever Japan's gigantic war machine. She asks the peace-loving nations to stop buying Japanese goods because every penny spent on Japanese goods would contribute to Japan's war chest in making the invasion more protracted.

By manipulating Chinese tariffs and currency and by Japanese-controlled police "advice" as to what to buy, Japan could soon drive out most of the foreign trade from China, as she has already done from Korea and Manchuria, thus turning the whole Chinese market into another private Japanese reserve. Moreover, with the control of China's railways, telegraphs, customs and salt revenues, agricultural and mineral resources, Japan could secure the sinews of war that would be envied by the most powerful nations.

Ruthless and frequent combings of the countryside, together with the "spiritual hygiene" to be administered by the "mental police" in the cities, could go far to remove opposition, while missionaries of the Pan-Asiatic doctrine would regiment Chinese thought by exploiting China's disappointment over the West's indifference, which they could magnify into the West's betrayal. Schools, radio, films, newspapers, mysticism, Buddhism, Confucianism and even Christianity could be conscripted, as already being done in North China, to preach the gospel of "Asiaticism." To these, when intimidation and the "chain guarantee system" of holding the clans responsible for the behaviour of their individual members are added, Japan could get control of China's colossal man-power. Within a few years the nations with vital interests in the Pacific and the Far East would have to throw up their hands in despair at the "Frankenstein monster" which is today being brought into being with their own oil and trade patronage. Everything east of the Urals and the Suez would be fundamentally affected.

Should Japan succeed in breaking down China's resistance, in spite of her financial weakness today, then who could reasonably question Japan's conviction that she could do what Chengis Khan did, once she got control of China's resources and man-power, while being protected by the myriads of strategic islands in the Western Pacific? And we must not forget that many Japanese claim that Chengis Khan himself was a Japanese.

One thing is certain. The events of the last twelve months have shown clearly that China would resist to the bitter end, until the invaders are driven out, for years there would be widespread uprisings, disorder, famine, epidemic and chaos over the occupied areas, with unthinkable sufferings for millions of people and with crushing blows to the trade of all nations.

In case Japan succeeded in breaking China's resistance the following calamitous events would take place. The liberal elements would be further discredited, while the position of the militarists now in control at Tokyo would be greatly strengthened. The latter would be able to carry the whole Japanese nation with them in pushing forward their long-planned expansionist schemes and could convince the Chinese people that the Christian countries only render lip service, that China has no real friend, and that it would be suicidal for China to resist Japan, who can successfully defy all the Great Powers.

The Chinese Republic as conceived by its founder is modelled after France, Great Britain and the United States. In spite of its shortcomings, the Chinese Government has constantly aimed at building up a democracy that will take care of its own people and contribute its share to the promotion of law and order in the community of nations. Despite great difficulties, China has made remarkable progress in national unification as well as in material and spiritual progress. As is well recognized by some leading statesmen of to-day, she has already rendered much service to the cause of peace by causing "exemplary discomfiture" to aggression. With moderate help—indeed, even with the materials discarded as obsolete by the Western democracies—China will be able to bring Japan to her senses before Japan can beat China to her knees.

The events since the invasion of Manchuria in 1931 clearly show that the outcome of this undeclared war will decide whether China is to remain an independent nation and continue her efforts for internal progress and international co-operation, or whether China's resources and man-power should be controlled and exploited by Japan. These are the grim realities that confront the world today.

THE PROBLEMS OF INDIAN AGRICULTURE AND SOME DOMINION COMPARISONS

BY DR ANWAR IQBAL QURESHI

(The author, who is head of the Economics Department in the Osmania University, Hyderabad, has recently toured in the Dominions and studied agricultural conditions)

THE PROBLEM

FROM time immemorial agriculture has played a predominant part in the national economy of our country, and in spite of recent tendencies towards industrialization, agriculture is bound to be our main industry for many years to come. The vague talk of India's glorious industrial past and the dream of seeing India as a highly industrialized country in the immediate future, has done more harm to the interest of the country as a whole than any material good, because it has diverted the attention of the country to uncertain future possibilities and has caused us to shun the issue. Agriculture has not received the attention that was due to it as the chief industry of the country, and has been rather neglected until very recently, both by the people and by the Government. No doubt attempts were made by the Government from time to time to do "something," and as early as 1839 the East India Company invited twelve American cotton planters to show how cotton could be grown, and in 1865 the Madras Government imported steam ploughs and other improved implements to improve the condition of agriculture, but these efforts did not yield much result.

The Famine Commission of 1880 drew the attention of the Government to the sad plight of agriculture, but no organized effort was made by the Government until the Famine Commission of 1901 emphasized in very strong words the necessity for definite State efforts to help the agriculturists. It was Lord Curzon's Government which gave the matter the sympathetic attention which it deserved. The provincial departments of agriculture were properly organized, experimental stations and agricultural colleges were established in the major provinces, and a Central Research Institute was set up at Pusa.

The Montagu-Chelmsford reforms promised a new era for Indian agriculture, as from now on agriculture was to be a transferred subject in charge of a Minister, and it was expected that this rather neglected industry would receive a great stimulus.

The importance of agriculture was duly realized by the Ministers in charge of agriculture, but as they had no control over the finances of the provinces nothing very material could be done. However, during this period one very important event took place, and that was the appointment of a Royal Commission with Lord Linlithgow as its chairman. The Commission made a very thorough investigation and submitted a report which can be considered as a Bible of Indian agriculture and its problems. It was unfortunate that shortly after the publication of this important report the economic horizon of the world became so overcast and two years later the severest economic depression began in which India was involved with other countries. Prices began to fall tremendously. Farming, which even in the days of prosperity was not a very profitable profession, became a great liability. Farmers could not even cover the cost of production. Unlike manufacturers, they could not "close," as farming is not only a profession but is also a mode of living, and farms cannot be closed like factories. When farmers were faced with decreasing prices they tried to produce more in order to make up for the difference, and thus glutted the market and themselves accentuated the depression. The finances of the Government dwindled considerably, and in order to balance their budgets, economies had to be effected, and unfortunately the axe of retrenchment fell on the beneficial departments.

However, the depression has taught us many useful lessons. It has made the industrial countries of the world realize that a very close relationship exists between agriculture and industry, and that it is in the interest of the industries themselves to desire a prosperous agriculture. It was discovered during this great depression that, owing to the decreased expenditure by farmers there was less demand for industrial products and many factories had to be closed, leaving a vast army of unemployed. This army of unemployed was unable to buy as many agricultural products as previously, owing to decreased purchasing power. These millions of unemployed created many difficult problems and brought home with greater force another great lesson—that industrialization at the expense of agriculture was not a wise policy. As a result, we find today in leading industrial countries of Europe and the United States of America a regular campaign being carried on to urge people to go back to the land. During the period of depression farmers suffered badly, but still they could work on their fields and produce enough to feed themselves and their families. The depression also showed the advantage of small-scale farming. The farmers who were not greatly dependent for their livelihood on the export of their products fared much better than those who produced on a large scale for the markets of the world. India,

which is a home of small-scale subsistence farms, fared much better in the depression than other agricultural countries that were mainly producing for export. In considering the problems of Indian agriculture these valuable experiences should not be lost sight of

The introduction of autonomy in the provinces has given the purse strings into the hands of elected Ministers, and the Cabinets in the majority of the provinces that made definite pledges in their electioneering campaign to improve the farmer's lot have been giving serious attention to the problems of the farmers. Therefore it will be worth our while to place the problem in its proper setting and then evolve the best and most efficient methods to achieve that end. And in this connection it is worth while to look at the other Empire countries and see what they have done for their farmers and how far we can follow their example. The problem is a complex one, and in order to examine it more thoroughly and critically it is advisable to split it into its component parts—(1) Better living conditions, (2) better farming, (3) better marketing—and to study each part separately. As existence comes before business, we shall first take up the question of better living

BETTER LIVING CONDITIONS

Man has been aptly described as the creature of his environments. This is particularly true of the Indian farmer, because he has a very rigid and circumscribed environment in which he lives and moves. From times immemorial he has been living in a village which until very recently has been cut off from all external influences. Owing to the lack of means of communication and transport and to his natural inborn conservatism, the Indian farmer lives in a world of his own. Except for a change here and there, which at some places is quite conspicuous, he still lives in the same way as his great-grandfather. The housing conditions in Indian villages are terrible, the congestion unbelievable, and the lack of fresh air and light very striking. A child born in this atmosphere, brought up by an illiterate mother, and growing up without any beneficial external influences, can never become a satisfactory farmer or a respectable citizen.

Whatever may have been the justification for such a state of living in the past, it should not be tolerated in the future, and the foremost task of any society or state should be to devote more attention to making him a better man and to improving his environment, and in due course of time, if this essential is achieved, he is bound to become a better farmer and a better business man. England, which in the last half of the nineteenth century was an

individualistic country to the very core and where the doctrine of *laissez-faire* was supreme, was the first country to realize the importance of improving man, and it was with this idea in view that free compulsory education began to be provided by the State. We find in India today that every scheme of betterment is retarded, owing to the fact that the masses are absolutely illiterate.

The most striking difference which I noticed in my travels in the Empire countries was between the Indian and the Dominion farmer as a man. I was shown many typical farms in Australia and New Zealand. I shall briefly describe one of them to show what better living means. I went to see a farmer. He was working in his field with his two sons. They were ploughing with the help of a team of horses. At this time they looked rather rough and shabby. In the afternoon I was invited to tea. I was taken to the most charming farmhouse that I have ever seen in my life. It was absolutely clean and everything was well arranged. In the living-room I found several agricultural papers, one technical journal and a number of books, some dealing with the problem of farming and others of a more general nature. On one side there was a piano, and the mistress of the house entertained me to music. When my host came in after a wash and change I could hardly recognize him. He was very neatly dressed in a lounge suit, and I was surprised at the extent of knowledge which he possessed of the markets and prices ruling therein. The farm quite fitted the description that we read in English poems. A child brought up in that open air and sunshine, with that neatness of surroundings, knowledge and culture, would certainly be a great asset to any state in the world. In India we find that there is a great antipathy shown by the educated classes to agricultural pursuits.

Many of the improvements which have been brought about in agriculture in European countries have been mostly due to highly educated farmers. Therefore it was considered that as long as educated persons were not made to take to the land—persons who have thoroughly studied the science and practice of agriculture, are rooted in the soil, and are familiar with village life—it was not possible to achieve any permanent results in creating a better peasantry in India. But we should ask ourselves why educated persons shun agriculture, why landlords want to live away from their estates and why the sons of farmers who get an inkling of education do not want to stay on the farm. The answer to all these questions is that the living conditions in the Indian villages are so bad and life so dull that it hardly affords any attraction for a person possessed of any imagination and intelligence to live there. Unless and until living conditions

in Indian villages are improved many of our most important problems cannot be solved. It is a great shame that the majority of our university students do not possess any experience of village life. I have made enquiries, and have found that about 80 per cent of students in our universities have never spent a night in a village.

Another reason for the poor state of agriculture and the agriculturist in India is the absence of leaders. The scarcity of village leaders and the lack of interest shown by the educated middle classes in village life is very largely due to the unattractiveness of the village and its uncleanness. Lest it may be considered that I am laying undue stress on the problem of better living, I may here quote Sir John Russell, who remarks "The efforts to improve agriculture are likely to be unavailing, unless the villages are improved and made fit for good cultivators to live in. This work has a deep personal side and could never be accomplished without enthusiasm and missionary spirit."* In this connection the British Dominions provide a very good example for India to follow. In every settlement every possible effort has been made to provide the decent amenities of life to the settlers and to make life worth living. There was a great opportunity for the provincial Governments to build better villages in the new canal colonies, but unfortunately this opportunity has been lost. It is highly desirable that in future all settlements should be on a group basis, and the village should be properly planned and provided with all reasonable amenities of life and facilities for play and recreation before settlers are allowed to cultivate their new lands.

Until and unless living conditions are improved in Indian villages, and the life of these teeming millions is improved, and they are made to realize what happy home life means, all talk of better farming and better business is useless. The British Dominions, where the main profession of the people is agriculture, provide a good lesson to India that the standard of living can be considerably increased, even of those who mainly depend on agriculture. To create an ambition in the hearts of these millions to *live* and not only to exist should be the chief motto of the better-living campaign, and for that purpose more and more co-operative societies should be started in every corner of the country. It must be clearly realized that better living cannot be imposed from the top. It must come from within, and no effort should be made to achieve quick results, rather, attention should be devoted to achieving permanent improvements by creating a desire in the hearts of the people to help themselves.

* Report of the Work of the Imperial Council of Agricultural Research in applying Science to Crop-production in India, by Sir John Russell, p. 223. Government of India Press, Simla.

In this connection the improvement in the lot of every farmer's wife and daughter is a necessity, and no effort should be spared to educate the future wives and mothers, as they are the very basis of our civilization. A colossal amount of work will have to be done before Indian villages become fit to live in, but there is no cause for despair.

The conditions in Australia and New Zealand fifty years ago were far from satisfactory, but all difficulties have been overcome by patience and hard work. The provision of the simple amenities of life and of simple sports and recreations will go a long way to brighten the lives of our farmers. The radio affords a welcome pleasure, provided the programmes are made to suit the taste of the villagers. During my travels in the British Dominions and the United States of America I found two agencies which were considered responsible for the better life in the villages, one was the influence of the schoolteacher, and the other that of the village priest. It is a misfortune in the greatest degree (and no efforts should be spared to remove it) that the schoolmaster and the priest do not carry healthy influence in the Indian village, and have failed to play the part that their colleagues have played in other parts of the world. In India, where illiteracy is so widespread, it is all the more necessary that the village schoolmaster should be made to carry on the work of rural reconstruction. At present these teachers are too poorly paid to possess any self-respect. The Government should do all that is in its power to increase their status. In a religious country like India, where people have more or less a blind faith in religion, the priest could become a vital factor in the work of improvement only if he were better educated himself, and had not to depend on the charity of the villagers for his livelihood. No effort should be spared to educate these priests and make them economically independent.

These are the two persons—the teacher and the priest—who know the farmers and their problems intimately, and everything possible should be done to utilize them in the work of rural reconstruction.

BETTER FARMING

We have laid a good deal of stress on better living in the Indian villages, but that is only possible when there are adequate means of livelihood. When a farmer has an annual income on an average of four to five pounds he can hardly maintain a decent standard of living. There is no denying the fact that an Indian farmer is a very frugal, shrewd and intelligent person, and makes the very best use of his land according to his resources in eking out a living from it, but we find that he is handicapped in various essential

fundamentals, and as long as these obstacles remain no farmer in the world, however intelligent and resourceful he may be, can earn a decent living.

In the first place, we find that the unit of his farming is not big enough. The average size of a holding in India is not more than eight acres, and in many provinces this average drops to three or four acres. Not only is his unit of production small, but it is hopelessly subdivided and fragmented. He has hardly any facilities for irrigation, and, on top of all this, he suffers from all the vagaries of nature. Who could stand up against such trying conditions successfully? The over-dependence on nature makes his outlook on life rather fatalistic, and gradually his despair reaches such depths that he begins to refuse to have faith in any preventive measures. The alarming rate of increase in the population is a very serious factor, which unfortunately had not been fully realized in India, and the problem has not been properly analyzed in all its probable effects. The increasing pressure of population on the soil must be taken very seriously. During the period 1921-31, while the population increased by 10 per cent, the area under cultivation increased only by 1 per cent.

There are three possible remedies to lessen the pressure of population on the soil: (1) Colonization, both internal and external; (2) absorption in other industries, (3) the attainment of better results by intensive exploitation of the soil and by other improvements.

(1) As far as the migration outside India is concerned, the matter is not in our own hands, and unfortunately there are not many countries who are prepared to receive our immigrants. The possibilities of internal colonization have not received the attention that they deserve. Some useful work can be done in this field, but it does not offer great scope.

(2) There is a growing belief in India that the main solution of our agricultural problems lies in developing the industrial resources of the country and thus relieving the pressure of population on the soil. It appears an excellent idea and quite simple to put into practice, for nobody denies the great desirability of developing the immense resources of our vast sub-continent. But when we examine the matter more analytically and dispassionately, we find it a very hard problem indeed. From 1921 to 1931, in the course of ten years, the population of our country increased by over thirty-two millions, which is greater than the population of Australia, New Zealand, South Africa, Canada and Eire combined. During the same period, in spite of the great industrial development of the country, there was hardly any increase in the number of persons employed. With the development of industries on a larger scale, more and more labour-saving devices are

bound to come into use, thus making it impossible to create further outlets for work for such an increasing population.

There is another school of thought in the country that believes that we should develop our industries irrespective of the cost and try to make our country self-sufficient for all our requirements. If this view is accepted, we have to ask ourselves what is going to happen to some of our agricultural products, which are mainly produced for export and for which there is very little demand in the country—as, for instance, tea (90 per cent of which is exported), jute, etc.—and what is going to happen to the persons who will be displaced from agriculture? I am afraid the question has not been properly considered and due weight has not been given to all the implications involved in it. If we are not going to buy from other countries certainly they will not be eager to buy from us. We cannot have the cake and eat it. The result of this policy will be that we shall be thrown back on our own resources, the advantages of the territorial division of labour will be denied to us, and if our aims are purely economic this policy has nothing to recommend it.

(3) Now we shall examine the third and the only alternative left to us. As a very substantial majority depends on the cultivation of soil for their livelihood, it is quite obvious that the condition of this industry must be improved if this vast population is to get any tangible relief. The average yield of various crops in India per acre is considerably less than in many other countries. The quality of the seed sown is generally indifferent, and the soil is starved of manures, and the amount of capital invested in agriculture in India is ridiculously small, the result being that there is a great lack of permanent improvements. The future welfare of the country lies in giving full and proper attention to agriculture and sparing no effort in putting the capital and the achievement of science at the disposal of the farmer. Very valuable scientific work is carried on by the Imperial Institute of Agricultural Research under its five different sections—viz., (1) Agriculture, (2) Chemistry, (3) Botany, (4) Mycology, (5) Entomology. This institution is one of the finest research institutes in the world, and I think easily one of the best and the biggest in the British Empire, but its fundamental drawback has been that this fine work has not been placed at the disposal of the farmer to any considerable extent. “The investigation fostered by the council should be for the express purpose of improving agriculture. The great need now is for full use of existing knowledge, rather than the accumulation of more knowledge, for work on the cultivator’s field rather than work in the laboratory”*

The condition of the Indian farmer can be considerably im-

* Sir John Russell, *op cit*, p. 215

proved by better and more efficient farming methods, especially by growing improved types of crops, the discovery of new varieties by selection and breeding, better control of pests and diseases, the conservation of soil fertility, and proper apportionment of manures and growing fodder crops. Careful attention should also be given to the ultimate aim for which crops are grown, as different markets need different varieties. Another important problem for Indian agriculture is that of cattle. But it is difficult to discuss it rationally, owing to religious susceptibilities. We possess the largest but probably the worst heads of cattle in the world, and surely it is time that we should tackle this problem firmly, courageously, and try to solve it.

BETTER MARKETING

In the world of today, where production is carried on for the markets of the world, no producer, however efficient he may be in the technique of production, is likely to succeed if he lacks business ability and is unable to market his goods efficiently. The problem of farm management and the marketing of agricultural products is far more important today than it was at the beginning of the century. No competent observer has ever doubted the skill of an Indian peasant as a farmer, but the general opinion is that as far as the business side of his vocation is concerned he does not possess any knowledge of it. It was not such a grave handicap fifty years ago, when he was living on subsistence economy, but it is a most serious drawback today when he is producing for the market. The weakest link in the chain of Indian agriculture is the farmer himself and his absolute lack of business ability. He borrows money at recklessly high rates of interest without the knowledge of what this credit costs him. This is bad enough, but, worse still, he does not know what it will bring him and cost in the future. He keeps no accounts, and his methods of selling are almost primitive. As a consequence he loses at every point, with the result that in spite of his hard work and frugality he cannot even make both ends meet. However, it must be realized that, although he has carried on the profession of farming from generation to generation, the business side is altogether new to him and is a phenomenon of recent origin.

It is rather unfortunate that until recently this side has been practically neglected in India both by the farmers and by the Government. Although the Government did make very laudable efforts as early as 1904, by starting the co-operative movement to provide credit to the farmers at reasonable rates of interest and to save them from the clutches of moneylenders, unfortunately the movement as a whole has not been successful except in a few pro-

vinces, but even in those provinces the movement has been mostly confined to the provision of short-term and intermediate credit. And the credit without the education to use it and the business ability to profit by it, which was altogether lacking in the farmer, has not been altogether an unmixed blessing. Even in the field of credit no effort was made until very recently to provide long-term credit, and the marketing side has not been developed to any extent at all.

In this connection we can have very good guidance from the British Dominions that have made provision for long-term credit for development purposes, and have organized an excellent system of marketing. They attach due value to publicity and the advertisement of farm products in the overseas markets. In Australia very valuable work has been done by the various marketing boards which, through wide publicity campaigns, have captured and developed overseas markets for the products of Australian farmers. Hundreds of thousands of pounds are spent every year to advertise Australian products abroad. The Farmers' Co-operative Organization is doing excellent work in linking the remotest Australian farmer with the consumers in the biggest cities of the world. The Overseas Farmers' Co-operative Federation, Ltd (London), which was started by the farmers in Australia and South Africa to sell their farm products, has so far sold the products of the farmers of these Dominions to the extent of one hundred million pounds. The Governments of the Dominions take a very active part in helping the farmers to sell their products in the overseas markets, and in order to maintain the good reputation of these products the Dominions have laid down very strict conditions regarding the standard and the quality of products that are to be exported. No important export product is allowed to leave the shores of any Dominion unless it is examined by Government experts and declared of standard exporting quality. As a result, the Dominion agricultural products enjoy a very good reputation in the European markets.

The whole machinery of marketing of agricultural products in India requires drastic overhauling, and this can be most successfully done if the process begins at the farm. It is one of the most important problems of our agriculture, and no effort should be spared to solve it. The best solution is the improvement of the outlook of the farmer himself, which can only be brought about by education, better living and the development of the spirit of co-operation amongst the farmers themselves.

LIFE AND SPORT IN SHANTUNG

BY CAPTAIN W A POWELL

THE Sino-Japanese War has brought the land of the Dragon once again into the news, but I shall refer here chiefly to the wonderful sport to be enjoyed on the hilly coastland and arable plains of Shantung, bounded on the north by the Gulf of Chihli and on the east by the Yellow Sea, where it is no rare thing for a single gunner to account for as many as a dozen varieties of game between sunrise and sunset

Shantung is the Holy Land of China. Confucius lived there. Extreme Conservatism prevails there, and such ancient customs as footbinding and the wearing of queues, first adopted after the Manchu conquest in 1644, were abolished with great difficulty by the Reformers in 1904. Its 56,000 square miles, which are rich in minerals, support nearly 37,000,000 inhabitants. Its western portion is a wide alluvial plain, forming the basin of that Yellow River which, owing to its habit of overflowing its banks or changing its course and so devastating the country, has earned for itself the title of "China's Sorrow." Its peasants are for the most part industrious agriculturalists—growing such divers crops as soya beans, the opium poppy, wheat, millet, ground nuts, maize and sweet potatoes—men highly regarded, for farming, in China, is the most highly esteemed of all occupations. The mining of iron, tin, lead and gold gives employment to others, some of whom resort to washing or panning for gold, and even filter the mountain streams with some suitable substitute for sheep's wool, the use of which for this purpose in ancient times in the Middle East doubtless gave rise to the classical myth of the voyage of Jason and the Argonauts for the Golden Fleece.

Between the mountain ranges—the name Shantung means "Mountains of the East"—lie broad estuaries or lagoons, frequented by countless varieties of waterfowl, including innumerable geese, swans, ducks, widgeon and waders. The saltings close to the water's edge merge into wide expanses of coarse grass and reeds which provide ideal cover for quail, hares, sheldrakes and an occasional bustard. Beyond this ground we come to fields of millet, kaohang and maize, extending to the hillsides and drained by channels overhung by tamarisk bushes which seldom fail to contain teal and snipe. Many of even the steepest hillsides are terraced and cultivated.

The winters are cold here. Consequently much of the in-

digenous timber—dwarf pines, cypresses, walnuts, poplars, pomegranates and wax-trees—has been cut down for fuel. The hill-sides, too, are regularly denuded of grass with which the k'angs, the Chinese beds of brick and earth through which flues are constructed, can be heated. But, thanks to the Shantung silk industry, a thick covering of scrub-oak, on which the silk-worms feed, is preserved on many of their lower slopes, and this provides admirable cover for pheasants, woodcock and hares. Finally, above the tree line, amidst outcrops of granite and shale, chukor and rock pigeons provide shooting of a kind to test the hardihood and satisfy the taste of the most energetic and enthusiastic sportsmen.

One approached the region, in pre-war days, from Wei-hai-wei, the port leased to Great Britain by China in 1898 and restored to China, in conformity with the arrangements made at the Washington Conference, in 1922. My diary records one of many typical shoots there in mid-autumn, after the China Squadron had gone south.

Our party consisted of the marine officer, the paymaster, the resident M.O. and myself. As a rule we first visited the tidal inlets or lagoons, as we called them, for wildfowl, but this time, rising early after a convivial evening, the effects of which we were in a hurry to dissipate, we scrambled to the summit of a precipitous ridge beneath which, in sunlit panorama of great enchantment, lay the walled city of Mahto, Leukung Island, Port Edward and the distant Ching-ming-tao or "Cock-crow Island."

The German destroyer whose visit had been the occasion of our festivities had left us. Except for a solitary motor-boat, the distant anchorage, the scene of great bustle during the summer, was deserted, but the little craft's engines could be distinctly heard in the still atmosphere, and the sound recalled an amusing incident at the dinner given, that summer, at the United Services Club, to celebrate the visit of the American Eastern Squadron. There had been a lively discussion of the respective merits of some noisy and new-fangled American motor picket-boats, or power boats as they were termed, and the steam picket-boats of the British cruisers, and the American Admiral had clinched the argument by assuring the British Admiral, the late Sir Hedworth Meux, then Sir Hedworth Lambton, that the British boats would stand about as much chance of catching the American boats "as a dog with wax legs would have of catching an asbestos cat in hell."

The Club premises had once been the Yamen of the Chinese Admiral Ting who committed suicide in mortification at his country's defeat by the Japanese in 1894, and had been transformed into a club by the installation of a bar, a billiard-room,

a bowling-alley and other amenities. Its Chinese barmen were adepts in mixing restoratives and hair-raising draughts, and it had been the scene of much memorable buffoonery, some incidents in which it may be worth while to recall.

One evening, for instance, a fierce argument between two junior N O's resulted in a "duel," the weapons being the contents of two large tins of uncooked sausages. The toss of a coin decided which of the combatants should have the first shy, the loser being required to stand motionless at a distance of about eight paces, each posing in turn as Aunt Sally until the ammunition was exhausted and honour satisfied. On another evening, while we were conversing before the bar, there crashed on to it, without warning, from the dim rafters above, the ponderous form of a large lieutenant from one of the cruisers. Having enjoyed a heavy meal of bacon and eggs and beer, after playing bowls, he had light-heartedly gone aloft and fallen asleep, stretched out on one of the rafters supporting the roof.

But that is a digression. I must return to the shooting.

Next to the bean-goose and brent-goose, the wariest and most exasperating game was the hill-partridge or chukor (*Caccabis chukar*). I have often stalked one of the sparse coveys of these birds with patient care, only to see them, while still out of range, soar, in the most provoking manner, across a ravine to an adjoining spur. The cock bird's note would then be derisively wafted back, for though they might be only 400 yards away, at least half an hour's strenuous trudge over the rock-strewn ravine was necessary in order to reach them.

Mongolian sportsmen, however, circumvent them by crafty means, advancing towards them behind large shields of paper stretched on rattan frames, with bright and fantastic designs painted on them. Many birds and animals which instantly take to flight at the sight of man will stand spellbound for a time at the sight of something novel and grotesque, and the Mongol sportsman, taking cunning advantage of this curiosity of theirs, is able to creep up within range.

On this occasion the paymaster volunteered to drive a distant covey over us, and we anxiously watched a large rock upon which he had promised to appear suddenly after his detour. He duly reached his objective, and from the covey, which made straight for our ridge, we brought down a brace of birds and later picked up a third. But the paymaster was in difficulties. We saw him, exhausted by his exertions, gyrate for a moment on one leg, gesticulate frantically with his gun, and then disappear down a cleft in the rock. Hastening to his assistance, we found him endeavouring to apply first-aid to a rent in his pants and cursing the local tailor.

"Jelly Belly" was that Chinese tailor's name, a name which we bestowed upon him in admiring recognition of his prodigious girth. His fitter was known to us as "Litty More Loo." Though tailoring was only one of many trades which the two followed, they were as renowned in our small outpost as are the exponents of their art in Savile Row at home, but as they cut our clothes in as close imitation as they could of the West End style, they were generally found too tight at the first fitting, and the fitter was, more often than not, obliged to say "More better me make litty more loo." Hence his sobriquet. The garment now undergoing repair had apparently been of ultra-streamlined pattern, and had burst asunder under the strain suddenly imposed upon it.

Further along the ridge we met a native sportsman—a village headman—carrying two and a half brace of chukor which he had bagged in two shots at sitting coveys with his long-barrelled gingall. He accompanied us until midday and gave some demonstrations of the almost incredible ranges at which he could bowl over hares with this formidable piece of ordnance, into the 48-inch barrel of which he rammed the strangest assortment of scrap metal, and he conducted us to a ridge where a pair of eagle owls had recently nested. We were lucky enough to see both birds at close quarters. They are the largest species of owl, and are fairly common throughout North China and Manchuria, where the natives believe—and ornithologists support their belief—that they live to the venerable age of fifty.

Another bird frequenting these rocky peaks, which it is fascinating to watch, is the large needle-tailed swift (*Acanthyllis caudacuta*), with its black head, brown back, white throat and breast, greenish wing coverts and wing-span of some seventeen inches. We admired it so much, on account of its vigorous flight, that, though it is very good to eat, we always refrained from shooting it. Wolves, too, lurk in the region, descending from the mountains in severe weather to raid the villages. Once, at the request of a village headman, I tried to ambush them by having a pig's entrails dragged along the top of a two-mile ridge and sitting up all night under a rock beside the trail. But the wolves were not tempted, and I watched in vain.

Snipe, on the other hand, were never watched for in vain in any of their known haunts. The Siberian steppes afford them an ideal breeding ground, and they are consequently to be found in far greater abundance throughout the East, from Korea to the Indus, than in Europe. It is nothing out of the way for a single gun to bag two hundred in a day, and they were so plentiful, on one unforgettable day near Nanking, that a good shot might very well have brought down two hundred brace. My own bag was only a quarter of that number. Driving, under such con-

ditions as prevailed there, provided better sport than walking the birds up, though it is not too easy to obtain suitable beaters in the Yangtze valley

But I must not digress, but must revert to the day's sport with which I started

Having added a number of chukor, hares and pigeons to the bag, we scrambled down the side of a ridge, to the foot of which lay a cultivated plain extending at sea level for some two miles before another range interrupted it. The principal crop there—incidentally the cover most frequented by snipe—consisted of the soya bean, the cultivation of which has increased enormously in North China and Manchuria since it was first shipped to England in 1904, and may be expected to increase still more as it costs so little to grow and so many fresh uses are continually being found for it. But it was, of course, not for beans but for snipe that we were looking

As the period of their southward migration was well advanced, and the bean plants were becoming bare, the birds were scarcer and wilder, a condition which we welcomed. We formed a line of nine or ten beaters and guns, and, in two hours or so, had picked up twenty-five brace, including several of the varieties to be found in China, which are the common snipe (*Gallinago caelestis*), the pintail snipe (*G stenura*), the painted snipe (*Rhynchos*) and the great or solitary snipe (*G major*). The painted snipe, however—the female of which we found to be both larger and more brilliantly coloured than the male—and the solitary snipe which weighs about eight ounces against the four ounces of the pintail and common varieties and two and a half ounces of the jack snipe, are not at all common in North China. The pintail snipe differs from the common snipe in having from twenty-two to twenty-six retrices, or tail feathers, as against the fourteen of the latter. The common belief that the jack snipe does not occur in the East is erroneous. We occasionally shot specimens

As evening approached we made for the marsh and mudflat which, here as elsewhere on the Gulf of Chihli, lay between the coastal ranges. It had the scenic charm that such tidal estuaries often have at sundown. The tide was at the ebb, leaving only a winding ribbon of water which extended inland from the small village of Chang-Chia-tsao over fen and salting for two miles or so before losing itself in the midst of the millet and maize fields. The stillness was broken only by the flight and calls of the waterfowl congregated at the water's edge, the most conspicuous among them being the Manchurian crane which is seldom absent from these estuaries during the winter months. The estuaries were also the feeding ground of the common heron (*Ardea*

cinera), little egret or white heron (*Ardea garzetta*) and little bittern, a family indiscriminately known in the East as "paddy birds" because they frequent the rice fields. The ubiquitous lapwing or peewit was also there, his plumage more mottled than that of his English cousin.

Before darkness closed in we bagged several mallard and teal, some from the reeds beside the estuary, others from the dykes which drain the marginal patches of cultivation, our shots, at the same time, sending seaward several large skeins of white-fronted geese assembled on the sand-dunes which flank the entrance of the tidal inlet. Brent-geese and bean-geese were also common migrants to these shores, being usually easier to approach than were the larger white-fronts, and there was also always the chance of bagging a Chinaman by mistake.

Partly because some of the crops in North China grow to a considerable height, and partly because the Chinese are much given to crouching on their haunches, even an experienced and careful shot occasionally peppers one of them by accident. Indeed, these accidents were so common that there existed a recognized indemnity tariff of five cents (about a penny) per pellet during the snipe-shooting season, and so slight and so lightly regarded, as a rule, were the injuries caused by the small No. 8 shot that many of our victims would, I think, have welcomed the penetration of their skins by a dollar's worth of this dust. But on this occasion, on the day following the shoot which I have just described, I showed myself, despite several years' experience of the local conditions, a complete mug.

From a stance on the stubble below a wooded hill I had just bagged a pheasant, and I had not the least idea that any natives other than my servants were within half a mile of me. Imagine my surprise when, a few minutes later, a villager suddenly appeared, his shirt open and his face, neck and head apparently streaming with blood. Clearly this was no case for the application of the five cent tariff. Too much damage seemed to have been done. So, after consulting my bearer, I produced a five dollar note, the sight of which worked like a charm on my gory friend, the precise character of whose injuries I had foolishly neglected to ascertain. He accepted the note with a smile, saying, "Me no makee more trouble," and, later in the day, he rejoined us, with a broad grin on a clean face and a small piece of plaster affixed above his collar-bone. It appeared that a single pellet of No. 6 had struck him there, and that he had waited in the bushes until sufficient blood had flowed to enable him to smear his entire face, head and neck. "Only one piecee bullet, but makee plenty blood," he cheerily assured us, and as he had so easily bamboozled us, we treated the incident as a joke.

The pheasants, by the way, commonly encountered in North China are *P torquatus* and *P Mongolicus*, those ring-necked varieties first introduced into England some two hundred years ago, which have interbred with the (so-called) old English black-necked pheasant, *P colchicus*, from the River Phasis, in Colchis, Asia Minor. This latter bird is not found in China and was probably first brought to Great Britain by the Romans. But to return to the narrative.

Arriving at our quarters in the temple compound at Chang-ts'un, we found our servants engaged in a fierce dispute with the villagers over the question whether our mules should displace from their stalls the mules already stabled in the compound. The altercation, in which the mules' ancestors and those of the contending parties seemed to be inextricably inter-related, having been settled in our favour, we set to work to prepare a collation of quail, pigeons and temple vegetables, and took stock of the temple itself which, like the majority of those in the British territory, was a Taoist one, and consequently well stocked with grotesque and fearsome images, mostly of local deities. There were, too, some scattered Buddhist temples in the province, but Buddhism in North China is a retrograde faith largely given over to demonology. The ancestral temples, of which there were several, were not, as a rule, thrown open to foreigners.

Ancestor worship, however, is responsible for one practical inconvenience. The British practice of requisitioning ever-increasing areas of cultivable land for cemeteries—a practice to the inescapable limitations of which Lord Horder lately drew attention—is seen in an aggravated form in China where it has prevailed from time immemorial. Village graveyards, in which the actual devotions take place, abound everywhere, and close to where we were shooting were some stone "beehive" tombs which have been there since the thirteenth century. The heavy masonry used in their construction—in shape they resemble Eskimo igloos—is thought to have been necessary for the protection of the dead from wolves and other scavengers which were far more numerous in mediæval times than they are today.

Moreover, just as our churches are often empty in the West, so the temples are often empty in the East. Our British churches, indeed, are veritable hives of activity compared with these Taoist and Buddhist temples of Shantung, which, except on the rare occasions of festivals, were completely deserted. Even the resident priest, where one existed, was often absent from his post, though our visits were very welcome to these gentry whom we paid liberally for the use of their temples as caravanserais. We preferred them to other accommodation because they were roomy

and, thanks to their never being occupied residentially, except, perhaps, by the priest, were agreeably free from vermin

The success of our shoots depended to some extent upon our success in enlisting native beaters familiar with the country to carry our impedimenta and collect the game, our domestic servants being sent on ahead, with mule train, to the village or temple in which we proposed to put up. All our beaters, on this occasion, were experienced and efficient, one of them, Hsiao K'un, though he had only one arm, displaying tireless energy. Originally he had been a blacksmith's mate, and in that capacity had, with complacent Chinese optimism, used a large projectile, a relic of the war of 1894, as his anvil. One day, however, that anvil, being over-heated or struck too hard, exploded, and the blacksmith "took the count," being lucky to escape with the loss of one arm and a disfigured face. Our medical officer had fitted him with a false arm complete with iron hook, but he had discarded it because the nickname of "Hookey," bestowed on him by his companions, displeased him.

Another interesting beater, remarkable for filial piety, was Shao Ying. Once, his mother being ill and apparently at the point of death, he had bitten a mouthful of flesh from his forearm and used it as stock to make broth for her. She had recovered, whether because of this treatment or in spite of it, I do not know, but Shao Ying was a proud man. I saw the wound in the Government Hospital and can vouch that for the purpose of his "cure" he had not spared himself. Subsequently, in recognition of his noble conduct, the Commissioner, the late Sir James Stewart-Lockhart, presented him, before an assembly of native schoolchildren at Government House, with a Coronation gold medal from surplus stock, and this was the most cherished of his possessions.

Filial piety, indeed, being regarded as a cardinal virtue in China, often expresses itself in curious ways. A classical example of its exaggerated manifestation is recorded by the late Sir Reginald Johnston in his *Lion and Dragon in North China*. The parents of one Lao Lai-tzu, he tells us, "lived to such extreme old age that he himself was a toothless old man while they were both still alive. Conceiving it to be his duty to divert their attention from their weight of years and approaching end, he dressed himself up in the clothes of a child and danced and played about in his parents' presence with the object of making them think they were still a young married couple contemplating the innocent gambols of their infant son."

Very interesting to me, too, were the patients who attended the Government Hospital—as a rule only when they were *in extremis*. They seldom failed to give practical proof of their

gratitude, although the surgery was often of a rough-and-ready order. Thus, the M O offered a villager whose gingall had burst, badly injuring his arm, the choice of a whiff of chloroform before the extraction of the splinters or a stiff peg of brandy after it! The patient chose the latter and stood the operation with remarkable fortitude. This man, together with a patriarch of nearly seventy, the crippled victim of advancing elephantiasis, whose leg had been successfully amputated above the knee, and a woman from whom a cyst weighing 40 lbs had been removed, were three beneficiaries who made regular pilgrimages to Port Edward to offer the M O garden produce and eggs.

China's principal peace-time problem continues to be that of maintaining the welfare of a healthy rural population. In Shantung, when I was there, in spite of recurrent famines, epidemics and the intermittent upheavals due to the irregularities of Tuchuns and other marauders of less degree, there were unmistakable signs of rural prosperity and of the desire of the populace to be left in peace to enjoy that prosperity. Before the present war with Japan, the troubles due to these sporadic disturbances had, to some extent, subsided. They had served, at least, to inspire such achievements as the Nationalist Government has to its credit, though it is common knowledge that, at the outbreak of hostilities, despite Nanking's suppression of several autonomous and semi-autonomous régimes in various parts of the country, the nation was far from being united. Its rôle was still the humble one of Door-mat in a world which demanded of it an Open Door policy.

The Nationalist Government was more anxious to fight the Communists than to fight Japan, but the Communists preferred unity, and the Red Army's "united front" appeal against Japan was taking shape when hostilities began. The Sian revolt, in which Chiang Kai Shek was made prisoner, was, indeed, an attempt by the N E Armies' commanders to procure Nanking's allegiance to this united front. A Southern army from Kwangsi and another from Sze-chuen have now lent their aid to the common cause, and, incorrigibly discordant though these cat and dog factions have hitherto been, they are now united in face of the invader.

But that is another digression. I must return to my shoot.

The estuary rising above our temple hostel at Chang-ts'un was remarkable for its exceptional width and the immense number and variety of wildfowl frequenting it. Our native attendants, as eager as we were for a full day's sport at this particular spot, aroused us and prepared breakfast before sunrise. Floodtide, when the duck would be feeding over an expanse of some three square miles of shallow water, was not till eleven o'clock, so we

followed a devious road up to and over the range, making good all the intervening patches of swamp, grass and bush. Our bag, secured in three hours before reaching the picturesque village of Shuang-tao, at the head of the estuary, was only a modest twenty head of mixed game, but the conditions of weather and scenery were ideal.

At the foot of the hills was an expanse of coarse grass on which brent-geese and white-fronts usually fed. It was devoid of all cover, but we had often succeeded in approaching within range by borrowing a donkey or mule and the blue dungaree clothes and wide straw hats of the village grass-cutters to whom the geese were accustomed. This time there happened to be no geese there, but two sheldrakes of a flock of half a dozen fell victims to this simple ruse. At a tiny patch of swamp almost within the walls of the village of Hou-shuang-tao we bagged a teal, a snipe and several quail (*Coturnix communis*), these last being migratory and feeding on the millet and hemp seed. We also, as we climbed the scrub-covered range, bagged several mountain hares (*L. timidus*), a species which abounds throughout northern Asia. They are smaller, browner, and have shorter ears than the English variety (*L. Europæus*). In northern Siberia they are completely white and so abundant that, on a tiger hunt in that desolate region, two winters previously, we had been able to make juggled hare a daily feature of our menu.

A fine view of the coastline right up to the Chefoo Bluff, thirty miles to the westward, greeted us from the crest of the range. To the north were the sunlit waters of the Gulf of Chihli, and to the south the rocky mountain ridge on which we stood was crested by the ancient temple Ai-Shan-Miao, shrine of the goddess Sheng Mu (Holy Mother). My diaries record many sojourns at this attractive hilltop retreat, and if its resident priest was as good a pastor of his flock as he was an innkeeper, no anxiety need be felt about his future welfare. Immediately below us, the broad expanse of cultivation was broken only by scattered villages, each in its sparse setting of trees, and towards the largest of these, Yang Ting, we directed our footsteps.

It was washing-day there, and as the womenfolk of Shantung affect the brightest of colouring in their attire, with a decided leaning towards combinations of green, magenta and indigo, we found the ladies of the village, resplendent in all but their crippled feet (for foot-binding was still in vogue among them), busily beating the village linen. They presented a gay picture against the background of drab village walls, and they flogged the washing with such energy that one could not help suspecting that these village laundries were subsidised by the button and linen industries.

Duck shoots such as ours have been so often and so well described that I need not dwell on this one at any length. We used four or five sampans, spaced well apart—a gun in each. The advantage of this manoeuvre, as many experiences had shown, was that the duck were kept continually moving over one or other of the guns. At our first shots several hundred swans rose, with a tremendous roar of wings, from the estuary and moved seaward—an impressive sight. The white-fronted geese also beat a hasty retreat without suffering casualties, but, for two hours, the duck provided good but difficult sport, our bag of them comprising mallard, pintails, scaup duck, velvet scoters and golden eyes. We also bagged several brent-geese, widgeon and shovelers.

While the boatmen carried these over the range to our temple, we trekked to foothills beyond Ti-yi-yuan at the landward end of the estuary to look for pheasants. They were never very plentiful here and always rather wild. We bagged only two or three brace of them, but on our way back to Chang-ts'un, at dusk, we sighted some bean-geese feeding on the autumn-sown wheat, as is their nocturnal habit. We succeeded in stalking within range—not an easy feat—and accounted for two of them. On the following day we returned to Port Edward.

KELADI CHIEFS THEIR CONTRIBUTION TO THE HISTORY OF MYSORE

By T C S MANIAN

ORIGINALLY a small village belonging to a Brahmin named Honne Kambli Bhatta, it became in about 1640 the capital of the Keladi Chiefs under the name of Bidanur or Bidarur, taking the place of Ikkeri, which was till then the capital of the Keladi Chiefs from about 1560 to 1640. A city identified with the changing fortunes of eighteen Keladi princes now lies deserted, and the traces of thousands of houses and basements of palatial buildings and temples countless in number confront the visitor who goes hunting for lore and legend. Signs of vandalism on the temples, pillage and plunder of its past troublous days could be seen in the dense growth of jungle which has overspread the once prosperous city which teemed with an industrious and prosperous population of over 100,000. Bright-plumed birds sing, as it were, the praises of the heroes who made Bidanur famous in history. Beasts keep guard over the ramparts where sentinels stood, and take toll of the cattle which unwarily approach their den.

An interesting legend traces the early history of the Ikkeri Chiefs—otherwise known as Keladi Chiefs—to two brothers, Chavuda Gowda and Bhadra Gowda, who, following the humble profession of agriculture, lived in the village of Hale-bayal of the Keladi Taluk. It is said that Chavuda Gowda built a temple at the place where the cow of his servant used to go daily and shed its milk on an ant-hill which, when dug up, disclosed the presence of a Linga. Yadava and Murari, the two servants of these, while ploughing, turned up a sword, which they put into the thatch of the house with the intention of converting it into a scythe. But to their surprise they found that whenever a crow sat on the roofing, the sword turned into a serpent and killed it. Chavuda Gowda, who was apprised of this miracle, took away the sword to his house, cleaned it thoroughly, and, naming it "Nagaramuri," kept it in a safe place. As luck would have it, the servants came upon it after some time on a cauldron containing treasure, and, afraid of the evil spirit guarding such treasures, they covered it up with mud. Chavuda Gowda was told in a dream that the treasure could be utilized by him after a human sacrifice. His two servants volunteered to offer their lives on condition that their names were perpetuated by their master. The story proceeds to say that the servants were bathed and while they were prostrating before the

cauldron they were beheaded by the "Nagaramuri" sword and the treasure was taken possession of by the brothers. With the accession of this wealth they raised a small force and began to subdue the neighbouring villages, when they were rewarded by the then Vijayanagar King for their help in punishing a rebellious chief with the ruling powers over the villages they had conquered and were presented with the Royal Mohur. They then founded the city of Keladi and built the temple of Rameswara. The two mounds called Kalte, at the entrance to Keladi, are pointed out as the scene of the human sacrifices. His son and successor, with the sanction of Sadasiva Raya, the then Vijayanagar Chief, took the name of Sadasiva Nayaka and obtained ruling powers over Bakrur, Mangalur, and Chandragutthi in appreciation of services rendered in putting down the several rebellious chiefs in South Canara, which he subsequently overran as far as Kasaragod.

The elder Sankanna Nayaka, son of Sadasiva Nayaka, leaving his kingdom to his younger brother, Sankanna Nayaka II, set out on a pilgrimage to all the holy places in India from Rameswaram to Nepal and Kashmir in the Himalayas. He is said to have defeated Ankush Khan, a celebrated prize-fighter of the Imperial Court of Delhi. While thus wandering, the god Aghoreswara appeared to him in a dream at Paidana and the god Veerabhadra at Avali, and in memory of these dreams Sankanna Nayaka the Elder built a temple on his return to his country, for Veerabhadra at Keladi and for Aghoreswara at Ikkeri, and lived in retirement for the rest of his days. The Aghoreswara temple is a large structure built of granite in the Dravidian style, and bears traces of the Chalukyan and Saracenic styles. With a lofty roof and ornamental doorways on the west, north and east, and the gigantic pedestal occupying nearly three-fourths of the Garbagriha, the temple is an awe-inspiring sight. Carved out of white spar, the translucent Nandi waits upon the god Aghoreswara and commands the admiration of all the visitors who go there.

The Nandi Mantapa in front of the north entrance has seven arched doorways, a large one on the south, and two smaller ones on each of the other sides, with a big Nandi inside.

In the time of Venkatappa Nayak, the Bijapur forces under Randulla Khan were routed and the dominions were extended to the north and east to Masur, Shimoga, Kadur and Bhuvanagiri. The conquest of the Pepper Queen of Gersoppa carried his sway to Honore on the sea coast and down as far as the borders of Malabar. Venkatappa received an embassy from the Portuguese Viceroy at Goa, who wanted to keep the monopoly of the pepper trade for his nation and exclude from it the English and the Dutch.

An Italian nobleman, by name Pietro della Valle, who accom-

panied the embassy, mentions the fine wide level road from Sagar to Ikkeri and the splendid avenue of the gigantic Dhupa trees on either side. The safety of travellers was so secure that he went alone afterwards through the country, marching at his pleasure and slowly descending to the ghats. Another traveller, Jacobus Canter Vissachar, writes "The city of Bednur, where the Raja holds his Court, lies some leagues inland and is connected with the seaport by a fine road, planted with trees, which the inhabitants are obliged to keep in good order. This road is so secure that any stranger might go and sleep there with bags full of money and nobody would molest or rob him, for if such a thing occurred the people in the neighbourhood would not only be severely punished but would be forced to make good the money."

The history of the Bednur Chiefs would not be complete without a mention of Sivappa Nayak, one of the most distinguished of the Nayak Dynasty, who ruled from 1645 to 1660. He gave shelter to Sri Ranga Raya, the fugitive king of the Vijayanagar line, who gave his ancestors ruling powers and invaded Seringapatam on his behalf and gave him the government of Belur and Sakrepatna. He introduced the land assessment called "Shist," which was fixed on 1,000 "Dayas" at various rates. The distance between the central pillars of the Aghoreswara temple was adopted as the standard measure for garden land. A rod of this length, equal to 18 feet 6 inches, was the space called "Daya" allowed for one tree. His "Shist" or land assessment and Prahar Patti or rules for collecting the Halat on areca-nut, are frequently referred to in proof of his financial skill, and he is said to have framed a scale of expenditure including every contingency for each day in the year for the Sringeri Mutt.

He had a standing army of from forty to fifty thousand men and had more than thirty thousand Christians among his subjects. His complete conquest of the whole of Canara brought him enormous sums of treasure which enabled him to extend his kingdom from the Tudry River to Kasargod or Nileswar. Bednur has become the granary of South India and given a considerable help to the present Mysore State since it was conquered by Haider Ali, who said that that conquest had established his fortune.

Merchants and artisans were given facilities to come and settle at Bednur and in the other places of his vast dominions, and monumental works of architecture like the Ikkeri Temple and the Devaganga Ponds still bear evidence of the skill of the artisans and the peace and prosperity they enjoyed during the 265 lunar years, 1 month and 25 days, as the chronicler has recorded it.

The Devaganga Ponds were used for swimming and bathing,

and the natural drainage keeps the water always clean. The waste water drains the flower garden which, with its high compound wall, afforded privacy for the Royal household to bathe. These are now in a neglected condition, and it is only proper that Government should preserve them under the Ancient Monuments Act. It is a marvellous piece of engineering skill and science.



FIG 1 —ENTRANCE TO THE BEDNUR FORT OVERGROWN WITH JUNGLE
The Palace and the Durbar Pavilion are inside the Fort



FIG 2 —ANOTHER VIEW OF BEDNUR FORT



FIG 3 —THE TEMPLE OF GOD AGHORESWARA, BUILT BY SOMKANNA NAYAKA, THE ELDER, AT JKKERI

In front is the Nandi Mantapa and to the right is the Brindavan



FIG 4.—THE DEVAGANGA POND WITH GARDEN AND PLATFORM

The sharp reflection of the garden plants indicates the clear water and the device by which the soiled water is drained off

THE FUTURE OF ANGLO-JAPANESE RELATIONS

By CAPT M D KENNEDY, O B E

DEVELOPMENTS in the Far East since the outbreak of the North China "incident" in July last year have aroused serious forebodings with regard to the future of Anglo-Japanese relations. British interests in East Asia, which have suffered severely during the past few years, are threatened with still greater loss and damage, and resentment, combined with anxiety as to what the future holds in store, has served to create an atmosphere of mutual bitterness and suspicion between the two countries.

In part, the damage inflicted on British interests has been due to the unavoidable "accidents of war," but in no small number of instances these interests have been flouted deliberately. To the resentment caused by this cavalier treatment has been added a feeling of genuine horror and indignation at the slaughter of innocent civilians by the bombing of Chinese towns and cities from the air.

The Japanese, on their part, are equally resentful against the British, whom they accuse of unneutral behaviour, of allowing themselves to be misled by Chinese propaganda, of placing obstacles in Japan's way, of stirring up world opinion against Japan, of gross hypocrisy in the matter of aerial bombardments and of numerous other misdemeanours. The fact that most of these accusations are based on somewhat flimsy foundations is beside the point. The Japanese as a nation believe them, and are just as indignant at the British for giving ear to all the "atrocity stories" told against Japan as the British are at the Japanese for what they are alleged to have done.

It is, perhaps, but natural that, when national sentiment is aroused, clear, dispassionate thinking gives way to unreasoning abuse of those who deliver moral lectures and criticisms and who level accusations against one's own nation. Neither the British nor the Japanese are free from this besetting sin. While, as an Englishman, it is easy enough to bring well-founded charges against Japan on a number of scores, one cannot close one's eyes to the fact that, viewed from the Japanese angle, British actions in the past have not been wholly without reproach. The unfortunate tendency of Englishmen to indulge in schoolmasterly admonitions against other nations serves, therefore, merely to disgust and

irritate the lectured party and to raise the devil in him. As one commentator aptly put it, the moral homilies and reproaches levelled against Japan in the British Press and on British platforms on the subject of aggression conjure up in the Japanese mind the vision of a reformed burglar who, while ready enough to retain the "swag" obtained in his unregenerate days, sees nothing inconsistent in declaiming against those who are now helping themselves to other people's goods. The vision may be distorted, but the reaction is the same as though it were correct in every detail.

Fortunately these homilies are less frequent now than they were in the earlier stages of the fighting in China. The more responsible section of the British Press and of British spokesmen has come to recognize that the policy of Canning, who always condemned resort to threats which could not be carried out, is a very much sounder one to follow than that of Palmerston, whose readiness to indulge in threats and denunciations was emulated by not a few politicians and would-be statesmen in England until a few months ago, and is not uncommon even now.

It is, however, Japan rather than Great Britain that is following, at the present time, a policy akin to that of Palmerston, and it is instructive to note that, along with this policy, she is also pursuing one which has distinct parallels with that of Britain at the time of the Seven Years' War. Of this last-mentioned period in British history, Professor Seton-Watson, in the prologue to his scholarly work on *Britain in Europe, 1789-1914*, remarks that England "pursued a policy of undisguised aggression . . . prompted, it is necessary to add, by a natural desire to forestall similar French designs of invasion and conquest."

Substitute Japan for England, and Soviet Russia for France, and this passage will be found to present a reasonably accurate picture of Japanese policy today. Japan, it is true, does not regard either the Manchurian embroglio of 1931-3 or her present conflict with China as aggression on her part, but the verdict of history will probably be that of Geneva. The Japanese historian of 150 years hence will doubtless be just as frank in endorsing this verdict as is the present-day British historian who writes of British history at the time of the Seven Years' War. At the same time, whatever may be said to the contrary, an objective study of Japanese policy since 1931 should make it clear that the principal spur to Japan's actions in Manchuria and China alike has been her anxiety concerning the steady spread of Soviet influence in Sinkiang and Outer Mongolia and her consequent determination to forestall similar Soviet designs in East Asia. The resulting clash with British interests has, in the main, been incidental rather than intentional. In short, just as British aggression in the second half of the eighteenth century was the outcome of England's desire to

forestall France, so is Japanese aggression today due primarily to Japan's determination to forestall Soviet Russia.

To obtain a parallel with Japan's present attitude towards foreign nations in general, one cannot do better than turn to the days when British foreign policy was in the hands of Palmerston and Russell "Palmerston," as Professor Seton-Watson observes, "will always remain typical of a certain phase of British policy and British psychology—in a mood of self-assertive nationalism which we ourselves have since outgrown, but which we find somewhat irksome when adopted by younger nations "

Possibly he had Japan, among others, in mind when he wrote this. Whether or not he had, the similarity between British policy and psychology in the days of "Pam," and Japanese policy and psychology at the present time, is sufficiently striking to merit attention. Nor is it without interest that Russia and China were denounced in no unmeasured terms by Palmerston and others as they are today by the statesmen and spokesmen of Japan. It is true that, in so far as the case of China was concerned, the abuse levelled at her was strongly criticized by Gladstone, Disraeli and others, whereas in Japan criticism of the Government's China policy is far less vocal. Nevertheless, abuse of China and other foreign countries by the governing authorities of mid-nineteenth-century England unquestionably suited the taste of the electors at that time and the same may be said of Japan today.

Despite assertions to the contrary, Japan, as a nation, is no more in love with Fascism or dictatorship than was early Victorian England, but although individually the kindest and most courteous of people, the Japanese as a nation exhibit "an assertiveness and assurance, a self-centred outlook, an indifference to the susceptibilities of other nations and an incapacity to see with others' eyes," such as the British exhibited in Palmerston's days. The effect on foreign countries is the same—ill-will, misunderstanding and general distrust.

There were those in high places in England, including even the Premier himself, who objected strongly to the high-handed attitude adopted at times by Palmerston towards foreign Powers, but as Lord John Russell frankly admitted to Queen Victoria in 1848, he, Russell, feared, in the existing critical stage of Europe, to raise a question "which might induce a belief that he (Lord Palmerston) had not conducted foreign affairs to the satisfaction of his colleagues or of his sovereign."

In closely similar words to these, one may expect some future historian of Japan's present policy to reveal the objection of certain Japanese civilian statesmen to the policy forced on them by the fighting services. Like Palmerston, the Japanese Army and Navy have, for the time being, taken the bit between their teeth; but

the more moderate civilian statesmen hesitate to pull them up at this critical period lest it "induce a belief" that opinion is divided in Japan.

The Japanese naval and military leaders are no doubt just as convinced of the righteousness of their cause as was Palmerston of his; but the invidiousness of the position of those who are compelled by circumstances to back them up and attempt to justify all their actions must, at times, be just as great as that of Russell and his other political colleagues, who had to support and justify all that Palmerston said and did. It is true that in England the voice of open criticism was raised more loudly at times than it is today in Japan, and Russell's sarcastic paraphrase of the official argument put forward to justify the war with China in 1856 is worth recalling "It is true we have a bad case, it is true we were in the wrong, it is true we have committed injustice, but we must persevere in the wrong, we must continue to act unjustly, or the Chinese will think we are afraid"

In like manner Clarendon, on a previous occasion, lamented that "if in the remotest corner of the earth any Englishman gets a well-deserved but uncompensated black eye, the newspapers and Palmerston immediately demand an enquiry into the conduct of the bloated sinecurist in Downing Street, who has no sense of British honour"

What Clarendon caustically remarked about "the newspapers and Palmerston" is applicable to some extent in Japan today. Many of Japan's grievances concerning the treatment of her countrymen in China are well justified and Japan is fully deserving of sympathy accordingly, but, as in the case of the particular type of Englishmen to whom Clarendon referred, Japanese newspapers and reactionary "patriots" are always ready to flare up when some unscrupulous adventurer of their own nationality, such as a smuggler or a "dope" peddler, is subjected to well-merited rough handling in China or elsewhere abroad. If the Japanese Foreign Minister—the equivalent of "the bloated sinecurist in Downing Street"—fails to obtain the satisfaction demanded, he is promptly denounced as "weak-kneed" and lacking in sense of Japanese honour and prestige.

It requires a brave man to take on the onerous duties of a Premier or Foreign Minister in Japan, for assassination by excited self-styled patriots is always a possibility if he fails to defend his country's honour in the way required of him by these muddle-headed gentlemen. It would, in fact, be well if British newspapers and politicians, who are always so ready to denounce and castigate Japan, would show more appreciation of the immense difficulties and dangers surrounding the statesmen and moderate elements in that country. Violent criticism and abuse by foreign Powers only

increase the difficulties of their position and reduce their ability to exercise a moderating influence on their more hot-headed countrymen

Though it is more than a hundred years since Perceval was assassinated in our own House of Commons, political assassination may now be said to be unknown in England. For this we should be truly grateful. At the same time, we would be well advised to show a more sympathetic attitude towards the statesmen of Japan and other countries not so happily placed. In England, the Press serves as a useful "safety-valve" for excited feelings, and the ardent patriot with a grievance against politicians and the like can "get it off his chest" by writing to *The Times* or some other reputable journal. In Japan, letters to the Press are virtually unknown, and so the aggrieved and outraged "patriot" turns to "direct action" in order to relieve his feelings.

As indicating the similarity between the state of popular feeling in England in early Victorian times and national sentiment in Japan today, it is perhaps pertinent to recall that Palmerston's fall from power over the *Orsini* Affair was due, not to disgust with his customary dictatorial and hectoring attitude towards another foreign Power, but because for once he showed unusual restraint and moderation. In view of the existing state of war-time psychology in Japan, Japanese statesmen face the prospect of a similar overthrow if they show the restraint and moderation which many of them do undoubtedly favour.

There, for the moment, lies the great difficulty in so far as the future of Anglo-Japanese relations is concerned. The present leaders of Japan, men like Prince Konoye, the Premier, and General Ugaki, the Foreign Minister, appear genuinely anxious to improve relations with Great Britain and recognize that, in order to do so, greater moderation and restraint are essential. Their task, however, is an extremely difficult one, for, as the Tokyo Correspondent of *The Times* emphasized in a recent despatch, they have to contend with the local commanders and with strong anti-British sentiment among Japanese residents at such places as Shanghai, they have also to contend with the reactionary elements which have, since the outbreak of the Manchurian trouble in 1931, increased so greatly both in numbers and power in Japan itself.

If those who, in England, are always so ready to denounce the Japanese and demand strong action against them would only stop to think for a bit, they would see that threats and denunciations only serve to weaken the hands of the Konoyes and Ugakis and strengthen the hands of the anti-British and reactionary elements in Japan. It is hardly too much to say, in fact, that from September, 1931, onwards, the virulent critics of Japan in England

and other Western countries have played as pernicious a part in bringing about the present deplorable state of affairs in the Far East as the much-abused Japanese "militarists" themselves. From Baron Shidehara, the liberal-minded Foreign Minister in power at the time of the Manchurian outbreak, downwards, the moderate leaders and elements in Japan have been handicapped at every turn and the chauvinist nationalist elements have had their hands correspondingly strengthened by the vociferous outbursts and, frequently, unreasoning abuse hurled at the Japanese from London, Geneva, and, in the earlier stages, Washington.

Since the collapse of the Stimson régime, the United States have adopted a far more moderate and reasoning attitude, with the result that Japanese-American relations today are on a more friendly basis than they have been for a long time past. British critics of Japan would do well, therefore, if they took this lesson to heart. Indignant as they may feel at what the Japanese have done and are doing, mere abuse will get them nowhere. It serves merely to aggravate the situation and increase the anti-British sentiment in Japan and does nothing to deter the Japanese from flouting British interests or continuing their campaign against the Chinese.

In saying this, there is no intention to minimise either the faults or the follies of the Japanese themselves. While denouncing the British for indulging in propaganda and abuse against Japan, the Japanese have been guilty of the grossest propaganda and abuse against Great Britain. The Press and public speakers in both countries have vied with one another in mutual recriminations of this kind, and the harm done to Anglo-Japanese relations by sensational headlines and distortions of fact is deplorable. Present-day propaganda methods and the somewhat debased standard of newspaper ethics are, in many respects, a far greater menace to the cause of peace and international goodwill than anything else, as nations are lashed into fury and indignation by unfair allegations made against them by others and by the deliberate falsification of facts dealt up to themselves by their own papers. The present widespread anti-British sentiment in Japan is largely the outcome of this vicious combination, and it will require both time and infinite patience to eradicate the harm done by it and to disprove to the Japanese the convictions it has inculcated regarding "perfidious Albion." General Ugaki and others are seemingly genuinely anxious to eradicate these beliefs and, at the same time, curb the extremist elements which, of late, have got so badly out of control. Moderation and restraint on the part of British critics of Japan should facilitate their task considerably and assist greatly to improve relations between the two countries. Continued virulent abuse will only add to their

difficulties and make the future of Anglo-Japanese relations a matter of increasingly grave concern

What is required is to take, not the short view, but the long. The short view is bound to be confused and distorted by sympathy with China's present plight, by indignation at the bombing of cities and towns and the slaughter of innocent civilians, and by resentment at the cavalier treatment of British interests. Those taking this short view may well say that moral considerations and national interests alike demand that steps be taken to assist the Chinese and to place every obstacle possible in the way of Japan. But even if such action were feasible, would it, in the long run, serve the best interests of ourselves, or the Chinese, or the cause of world peace? A dispassionate survey of the facts must surely show that it would not. If, as is probable, it led to war with Japan, it is difficult to see how any country, with the possible exception of Soviet Russia, would have anything to gain by it. The Far East would be thrown into even worse confusion than it is at present and in view of Japan's relations with Germany, Italy, and the Soviet, a world conflagration might well result. Even if these last three countries contrived to keep out of it and hostilities were confined to Britain, Japan and China—a most unlikely contingency—the ultimate victor would emerge as exhausted as the vanquished, and the Soviet would be left with the most perfect material on which to work for world revolution. China would then be worse off than ever and everyone else would suffer as well.

On the other hand, action by Great Britain which stopped short of war would assist China but little and would leave Japan with a permanent and ever-increasing legacy of hate and resentment against Great Britain. The resultant and continued tension in the Far East would certainly be of no great service either to Britain or China.

It is necessary, therefore, to take the long view and to consider how to ensure an improvement of the situation in the years that lie ahead. To do this it is necessary to recognize that, in view of our own strategic position in the Far East and of our great commercial and financial interests there, Japan can be only one of two things. She can, as proved during the period of our alliance with her, be a most valuable friend, alternatively she can be a most dangerous potential enemy. Those who decried the abrogation of the alliance and gave warning of the probable results of that incredible piece of folly have proved better prophets and judges of the situation than those who hailed it at the time as a fine stroke of statesmanship. A return to such an alliance is probably no longer feasible, but with Japan as a dangerous potential enemy as the only alternative, it seems but the most elementary wisdom that Great Britain should strive its utmost to work out

ways and means by which, when the time comes and the present hostilities in the Far East have been brought to a conclusion, a firm and friendly understanding with Japan may be brought about. Admittedly there are great difficulties in the way, as there can be no question of reaching an understanding which ensures our own interests without considering those of China and other countries as well.

Japan herself would have just as much to gain from such an understanding as would Britain and the other interested Powers. The present inflamed state of national sentiment makes it difficult for the mass of the Japanese to appreciate that this is so, but the British, if they play their cards properly, can do much to engender this recognition when passions have subsided and Japan finds herself faced with the stern realities of post-war economic and financial rehabilitation. The pity is that the advice of those who, for some years prior to the outbreak of the present hostilities, had been urging the desirability of Anglo-Japanese accord and emphasizing the dangers of delay passed unheeded. In that the advice, if followed, would have entailed certain relatively minor concessions on the part of both Britain and China, it was no doubt unpalatable, but, as pointed out at the time, concessions made freely could be used as bargaining points and would help to create mutual friendship and goodwill. Failure to make timely concessions might, on the other hand, lead ultimately to forcible seizure of far more than would have sufficed earlier if conceded in a spirit of give and take. The result would be, not friendship and goodwill, but a legacy of bitterness and resentment with inevitable loss of prestige as well. The events of the past fifteen months have served all too well to justify this warning, just in the same way as the forebodings of those who forecast the probable consequences of the abrogation of the Anglo-Japanese Alliance have proved well founded.

As one who frequently gave expression to such warnings during the years immediately following the termination of the alliance and prior to the outbreak in North China last year, I may perhaps be forgiven for quoting a single passage from a book I wrote three years ago:*

"If matters are allowed to drift on as at present, not only is the steady advance of Japan's virtual control over large sections of North China likely to continue, but—in the absence of any agreement to the contrary—foreign interests in China will suffer in direct ratio to the speed of that advance. Loss of these interests can only lead to increasing bitterness and apprehension in the countries affected and may, in time,

* *The Problem of Japan*, p. 269. (Nisbet.)

precipitate an armed clash in which the only Power likely to profit in any way will be Soviet Russia, while all others will suffer. Is it not but the most elementary wisdom to strive now, before it is too late, to check the Japanese advance by friendly and freely negotiated agreement providing for recognition, both of Japan's strategic and economic requirements and of the interests of China and the other Powers?"

Developments in the Far East since this was written have served to prove rather than disprove the justification of this plea and its attendant warning

Obviously tempers are too frayed and passions too inflamed at the moment to render negotiations for such an agreement just at present a matter of practical politics. Moreover, as a result of failure to act in time, Great Britain's bargaining points are even fewer in number now than they were three years ago. Another opportunity may, however, be offered when the present hostilities have been concluded and Japan is faced with the even sterner task of dealing with the problems of post-war economic and financial rehabilitation. British statesmanship will then be presented with fresh material for bargaining and, if it plays its cards properly, may well find itself in a position to bring about a real and permanent solution of the Far Eastern problem and to restore Anglo-Japanese relations to their old and traditional basis of friendship and co-operation. In the meantime, actions likely to aggravate the situation should be avoided as far as possible, and we must be content to mark time and to trust that Japan will appreciate the fairness of the friendly sentiment expressed by Mr Chamberlain in the House on July 26

"When the Japanese Government claim that they are protecting their interests in China, I am sure they must recognize that we too have our interests in China and that we cannot stand by and see them sacrificed in the process "

If the Japanese are to accept this view, moderation and restraint on the part of British critics of Japan is essential. Failure to exercise these virtues will only lead to further flouting of British interests and the future of Anglo-Japanese relations will be fraught with the gravest consequences to world peace

BRITISH TRADE PROSPECTS IN CHINA

BY R. T. PEYTON-GRIFFIN

THE future of British trade in China is a matter which is giving those most intimately concerned in it cause for grave anxiety, though this is mixed with a quiet confidence which has not yet been destroyed by the serious turn events have taken during the past year. Any question which can be posed on the subject will not necessarily find a ready answer, for there are several interlocking factors which have to be taken into account, as, for example, the future duration of hostilities, the method in which they are carried out, and the policy which the Japanese intend to follow in their endeavour to make the military adventure into China a paying one. It would indeed be rash for anyone to seek to forecast when hostilities will come to an end, but it is clear that the future of foreign trade in general—excluding for the moment Japanese—and of British trade in particular depends very greatly upon the duration of the war. How much injury has been and will be done to China's purchasing power? What are the chances of a rapid recovery? The Chinese losses are so colossal that it is almost impossible to endeavour to set a figure to them. The trek of tens of millions of people before the onrush of the Japanese invaders, the distressing toll which is being taken by epidemics, more greatly to be feared as the months pass, the utter destitution of those who have forsaken their homes in fear, the execution of the Chinese "scorched earth" policy and the determination to give the Japanese as empty a success as possible, have all contributed to the creation of a state of affairs uninterpretable in terms of money, even if in the absence of any statistical system such information could be collated. To the destruction of physical property must be added the growing inability of the Chinese to earn what they did before, so that with the capital loss, which must be enormous, must be considered the greatly reduced earning capacity of the people and its profound effect upon the spending power of the nation. The longer these hostilities are protracted the more impressive must be the effect of these factors, and the speed with which Chinese markets regain normality must be in direct ratio to the time through which hostilities are prolonged. The factors which operated in the recovery after 1932 do not now apply. The damage which has been done is so many times heavier, and so much more widely spread that criteria of the past are of little avail in endeavouring to estimate the possibilities of the future.

Japan's policy in China is another matter of which sight must

not be lost. The frequently repeated assurance that Japan has no intentions of territorial aggrandisement in China has gone by the board. True it is still often referred to, but it must not be overlooked that no less an authority than Prince Konoye, the Japanese Prime Minister, in the Japanese Diet on March 28 of this year, announced that "Japan is determined not to evacuate an inch of the territory now held by her armed forces and is planning to exploit the industrial and economic resources of the occupied areas." It does not matter greatly what civilian Ministers have said with regard to the scrupulous respect which is to be paid to foreign third party rights and interests in China, the fact is that the big Japanese financial houses of Mitsui, Mitsubishi, Okura, Yasuda and Sumitomo are marching into China behind the bayonets of the Japanese Army, and through its Special Service Section are seeking to obtain such a hold upon Chinese commerce and industry that the foreigners will have very little opportunity, so far as they are concerned, of rebuilding their businesses, unless there is sufficient pressure brought to bear upon Japan to bring about a complete change of heart. It is through this Special Service Section of the Japanese Army that normal military espionage has been extended to the economic fields, and their devices for interfering with foreign trade are innumerable and ingenious. There is, for example, the widespread smuggling which has been going on in China under Japanese control for months past, as a result of which huge quantities of Japanese goods have entered the country paying no duty whatsoever, there are plenty of instances of discriminatory legislation by puppet governments, there is the closure of the interior to foreign travel and goods, and while it is possible for foreigners to live in the treaty ports, and maintain their residences in districts where they have braved all the terrors of war to remain, travel in the interior is impossible. The Japanese will willingly grant passes for their nationals to go wherever they wish in search of trade, but will on one pretext or another—generally that of military necessity—refuse to grant similar facilities to travellers of other nationalities. Thus despite the capture of Nanking in December, though Japanese civilians are permitted to travel freely between Shanghai and Nanking, that same right is denied foreigners, with the recent exception of two passes granted to missionaries, the very obvious idea being to keep foreign business out of the market long enough to obtain all preference for the Japanese.

It would be impossible to give a full list of all the infringements of foreign trading rights which have occurred through the instrumentality of the Japanese during the past twelvemonth. There have been so many, that even in China there is a danger of their being taken too much for granted, so many that it is impossible

for some to see the forest because of the trees. But in addition to the exceptionally large number of instances of Japanese discrimination against British and other foreign interests, there are to be seen developments calculated to wipe out the latter as rapidly as possible. The establishment of monopolies is a case in point. The wool trade of North China, in which British exporters in Tientsin were greatly interested, has passed under the control of the Japanese, who have enforced the registration by the Chinese holders of the whole of the clip, and if a British buyer were able to purchase from the old sources of supply, he would be unable to obtain freight facilities to the coast—on the score of military necessity. Just recently there has been an attempt to persuade Tsingtao middlemen in bristles no longer to sell to foreign buyers. The pressure is not very great at the present, because all Japanese arrangements have not yet been made, but an announcement made on the day that this article is being written, is to the effect that no further exports from Tsingtao will be permitted unless they are financed by the Yokohama Specie Bank—a direct attack on the activities of the branches of British banks established in that port. In Shanghai within the last few days a scheme has been announced for the establishment of a monopoly over the inland shipping of China, more immediately concerned with the navigation of the waterways of the Yangtze delta. An alleged Sino-Japanese concern is being formed, which seeks to oblige all British and other foreign ship-owners interested in this business to join the monopoly, registering their vessels with it at values to be arbitrarily placed upon them by the sponsors of the movement. They will be allowed to operate as participators in a sort of co-operative scheme, in which the estimated value of their craft will be regarded as capital investment in the undertaking. Fifty per cent. of the net return of any voyage will be paid over to the monopoly, out of which will be found overhead expenses, and, perhaps, ultimate dividends. But it will be seen that the former free and unrestricted competition on the inland waters of the Yangtze delta will be controlled by a Japanese dominated concern, and history has shown that that control will be operated in favour of the Japanese trader.

The rapidity with which the preparations are being made for assuming control of all key industries in the provinces occupied by the Japanese forces, is again emphasized by the fact that hardly a week passes without the announcement of some form of monopolistic undertaking. Thus, in addition to the above example, the Peking Provisional Government has announced the formation of the North China Telegraph and Telephone Co., with a capital of Yen 35,000,000, which will succeed in part to

the functions of the former Ministry of Communications. Existing institutions will be absorbed by the new company, shares being allotted to the amount of the estimated value of the properties thus turned in. This company will be controlled by a board on which Japanese and Chinese will sit, though the Japanese will hold the key positions. Then, again, in Central China, the Nanking "Reformed Government" announces the establishment of a monopoly embracing all power companies and waterworks, whether privately or publicly owned, which have to be surrendered voluntarily on the usual terms, of shares for the value of the property, and should owners fail to surrender within a stated time, only one-quarter of the estimated value will be given to the owners in the shape of shares in the new concern.

It may reasonably be expected that as opportunity offers Japanese control of the currency of Manchoukuo, and but recently North China, will ultimately be extended to the whole of China under Japanese control, and by this means, and the consequent control of foreign exchange, another heavy blow will be dealt to British trade in China. In order that it may be emphasized how closely the Japanese contemplate maintaining control over trade in China, the following despatch from Domei, the principal Japanese news agency, reporting from Tokyo on April 7 of this year, may serve:

"Unified control over Japanese business activities in the parts of Central China occupied by the Japanese Army is sought in a set of regulations promulgated today in Shanghai by the army, navy and consular service. Enterprises of minor importance will be controlled by the local consulates, but important industries coming under the heading of national policies will be supervised jointly by the army, navy and consulate.

"The businesses that will come under the new jurisdiction include banking, trust companies, warehousing, mining, fishing, transportation (shipping, aviation, railways, tramways and motor-buses), communications (telegraph and wireless telegraphy), electricity, gas and water supply, important manufacturing enterprises (staple fibre, cement, flour, sulphur, tobacco, liquor, pepper, fats and sugar), and retail business such as the operation of public markets, abattoirs and salt distribution."

A completer control of the industry and commerce of the occupied portion of China it is difficult to conceive, and it must be remembered that no matter what the civilian side of the Japanese Government may have promised the world at large, the military

and naval high commands in the field contemplate bringing the whole of these activities under Japanese control—to the complete exclusion of the foreigner, if necessary

That the outlook is gloomy from the foreign point of view, and especially the British who have so much at stake in China, is undeniable, and it is not inapropos at this juncture to consider how fitted Britons are to meet the menace to their activities. It is difficult to obtain precise figures calculated to give a good idea of the situation, but the following figures have been obtained from a sound source and may be taken as reasonably correct. The material loss in Shanghai arising from the hostilities in that district is put in the neighbourhood of £500,000, that does not take into account contingency losses from ten to fifteen times that sum. It is believed that the loss on British investments in China as a result of the past year's fighting is such that the total estimated investment of some £300,000,000 will have to be written down by between 40 to 50 per cent. It is impossible to arrive at any idea of what the Chinese losses have been in terms of money, but it is safe to say that the total must be a colossal one, many times greater than the largest of the above figures.

It must be remembered that all the destruction which has been wrought in China, and the suffering which has been caused, must react upon her foreign trade, and that of Great Britain more particularly. It is impossible to estimate to what extent the purchasing capacity of China has already been reduced, though there is all the evidence available that it is already tragically below its former levels. Prolongation of the hostilities cannot but have an increasingly deteriorating effect, and even as matters stand at the moment many years will have to be spent in recuperation before China will again possess her former purchasing power. Were hostilities to end shortly with the fall of Hankow, it is possible that some sort of peace would be arrived at which might permit the Chiang Kai-shek régime to retain control of Southern and South-West China. That might afford Hongkong an opportunity for continued prosperity, but the fate of the British merchants in Central and North China depends entirely upon what are the plans of the Japanese military on the spot, and whether present economic developments under its ægis are incidental or fundamental. The formation of the various monopolistic enterprises referred to above, taken together with Prince Konoye's statement, indicate to the mind of the writer that whatever Japan originally planned regarding the military adventure in China, it is now intended to annex in some form or other all the territory now occupied or which may be occupied by the Japanese troops. There may be the familiar establishment of

government such as that in Manchoukuo, the classic example of what Japan is endeavouring to establish in the overrun areas of Central and North China. Every indication points to this development and if it eventuates it will amount to just as complete a military, political and economic hegemony as that which has been established in Manchoukuo, with all that that has meant for the British trader. Even the trend in recent years for Great Britain to concentrate more on the sale of capital goods to China will not save the situation if such a development occurs. It is true that much of this cannot be supplied by Japan, but Germany's abandonment of China, and the consequent loss of the growing trade which the former was building up, will probably find compensation by the diversion of contracts to Germany, which otherwise would have been open for British competition.

If the foregoing conveys the impression that the Open Door in China may soon deteriorate into a mere exit for all except Japan and her anti-Komintern allies, it is unfortunate but nevertheless true. Or rather it will be true if Great Britain and the United States, together with the other nations concerned, fail to find some method of counteracting what are undoubtedly the plans of the Japanese Army command and its Special Service Section. It must be remembered that the army has eventually to justify by results the enormous expenditure to which it has committed Japan. That can only be achieved by the most complete and ruthless exploitation, and exploitation which can and will brook no competition unless it is supported by forces which neither the Japanese Army nor the Government would care to oppose to ultimate conclusions. Looking at the whole affair as an investment, it must be realized that Japan has already spent something in the nature of Yen 7,000,000,000. It has been stated, on the authority of the former Minister of Finance, that Japan could afford to spend half her national wealth on a successful campaign, or something in the neighbourhood of Yen 52,000,000,000. Should the hostilities continue for another year it may reasonably be expected that the cost to Japan will be at least Yen 20,000,000,000, for wars do not grow cheaper as they continue. But that is not the whole of the bill Japan has to face in seeking to turn this war of annexation into a profitable undertaking, for it is very apparent that huge sums will be required for investment in China. How much will be required it is difficult to estimate, but the value of the Japanese cotton mills destroyed by the Chinese in Tsingtao was said to be in the neighbourhood of Yen 300,000,000. If that figure is to be taken as any criterion, it is clear that the present ambitious schemes of the Japanese will run into some thousands of millions of yen. A figure of Yen 1,500,000,000 is lightly quoted in Japanese periodicals as being the

sum necessary, but if Tsingtao is any standard it is apparent that even the expropriation of properties at fantastically underestimated values will do little to relieve Japan of the task of finding very considerable sums with which to carry on, while the diminished purchasing power of the Chinese, to which reference has already been made, must mean that the likelihood of securing adequate returns must await China's recuperation. That it may be confidently expected will take many years, for no similar disaster, not even the Taiping rebellion, has wrought so much damage and suffering as has this latest adventure of Japan on the Asiatic mainland.

Japan has yet to solve all these problems, and the conviction is growing that she is completely unable to do it by herself. Whatever assistance she may secure from Germany will be only along the lines of barter—Chinese produce for German machinery. That will do nothing to meet the major of her problems, so that other foreign nations, but particularly Great Britain and the United States, have still more than a little to say in the ultimate development of China. Much is made of the contention that the policy of the Open Door can be maintained, by those nations destined to suffer under what appears at present to be the Japanese scheme, by the denial of the British imperial and the American markets to Japanese trade. There is much of virtue in the argument until it is realized that such a step would reduce Japan to such a state of economic desperation that war would be inevitable. Resort to the application of such an economic sanction should be made only if the two great powers concerned are prepared to go to such an extreme, and while there is little reason to believe that they would suffer anything but minor and temporary reverses in the military and naval sense, the stranglehold upon Japan would in all probability be so tragic in its effects as to lead to the downfall of the Japanese Government and the establishment of some other form which might be even more inimical to world interests. Something of the sort in such an event would be inevitable, for Japan cannot find self-sufficiency in that portion of China which she has already captured, and is unlikely to do so for many years to come. It will not be until the living standards of the Chinese have been very considerably raised that they will provide a satisfactory market for all that Japan has to sell to maintain her economic position.

The alternative arises out of Japan's need for money to develop her conquest. In this fact lie the many references which have been made by Japanese spokesmen to the desire that other nations should co-operate with them in their programme for the future development of China. There is no spirit of generosity behind this frequently expressed wish, but the knowledge that Japan is

entirely unable to do it unaided. But the co-operation which is desired merely takes the shape of loans so necessary for her purposes. If Great Britain and the United States desire to finance their own elimination from China's trade the best and surest method of doing so is to meet Japan's wishes in this respect.

The foregoing presents a gloomy picture, but it must be emphasized that if the present Japanese policies are fundamental and not incidental then the situation is serious. All the developments to which reference has been made, and the many others which cannot for reasons of space be included, have about them all the evidence of permanent intention, and unless some means are devised for supporting British traders in this part of the world, they will be reduced to fighting a rearguard action. There was a time when it was possible to believe that Japanese failure to implement assurances regarding the rights and interests of third party neutrals was due merely to the lack of control over the Japanese forces in China, but all the evidence points to a definitely concerted scheme between the Japanese Army and big Japanese business interests to exclude foreign competition from this particular field. I have indicated methods by which it might be possible to ward off this onslaught, but it is clear that whatever steps are to be taken will have to be taken quickly, for with the end of hostilities there is every possibility that so far as foreigners' trade in China is concerned those engaged in it will be faced with *un fait accompli*. At the moment the whole machinery for British trade in China stands but little impaired. Given facilities it would easily go into action, and despite Japanese competition probably succeed in regaining old customers, contact with whom has been broken in many cases for nearly a year. There are still goods in which the Japanese cannot compete, but in those British traders will only be allowed to do business on Japanese terms and through Japanese intermediaries, who may be expected to milk the trade of all that it will yield. But despite all this, if the lending Powers of the world refuse to grant Japan loans, except upon terms providing against such extensive raids on the trading interests of their nationals, Japan may still be brought to reason. She cannot finance her scheme for development in China from her own resources, and must look to other countries for financial aid. And as has already been pointed out, if American and British financiers are prepared to assist in the elimination of their trade with the Far East, they have only to meet Japan's requirements with regard to loans. Refusal except on terms seems to be the only remedy short of applying those stronger methods which would close the most important markets of the world to Japanese exports. That may be a dangerous weapon, but there can be no doubt about its effectiveness in the long run.

TU-THUC AN ANNAMITE LEGEND

BY PHAM-DUY-KHIEM

(Translated by STANLEY RICE)

MORE than 500 years ago, in the time of the Tran* kings, there lived a mandarin called Tu-Thuc. A native of the province of Thanh-Hoa in North Annam proper,† he was sent to Tonkin to take charge of a district in which there was a pagoda, much visited by the people. It was celebrated for a magnificent pæony tree which grew in the temple enclosure. Every spring the tree blossomed, and crowds of pilgrims came from all parts of the country to admire the beautiful flowers.

In the second month of the year Dinh-Ti (1396 A.D.), when the festival was at its height, a beautiful girl came like the rest to look at the flowers. She leaned carelessly against a branch and broke it. She was not allowed to leave. Evening had fallen and no one had yet released the girl, by compensating the pagoda, when by chance Tu-Thuc passed. As soon as he heard what had happened he took off his garment of brocade and offered it in exchange for the girl's liberty.

From that day on everyone praised the kindness of the mandarin. Unfortunately he was fond of drink and of reciting poetry and so he neglected his duties and often drew down upon him the reprimand of his superiors. At last he decided that for the sake of a few measures of paddy, he could not live always surrounded by empty honours and intrigues. He yearned to follow a narrow path which should lead him towards "limpid waters and blue mountains" to satisfy the longing of his heart.

And so one fine day he delivered up the seals of his office into the hands of his superiors. His inclination led him to the springs and the grottos of the country of Tông-Son. He therefore built himself a house and lived there in retirement. He was accompanied, on every excursion which his leisure allowed him, by a boy who carried a calabash of wine, a guitar and a volume of poems. He would sit down in the spot that pleased him most to drink or to play his guitar. Nor was there any strange or picturesque place that he did not know, the mountain of Chinh-Tro, the grotto of Green Clouds, the river Lai, the mouth of the river Nga—he visited them all and composed poems about them.

* The Tran dynasty reigned from 1225 to 1413. There were fourteen kings.

† Annam in the larger sense comprises today Tonkin in the north, Annam proper in the centre, Cochinchina to the south. The inhabitants are all called Annamites.

One morning, rising early, Tu-Thuc looked out in the direction of the sea and saw some leagues away five clouds of different colours arranged in the shape of a lotus flower. He got into a boat and was rowed out to the place. There he saw a superb mountain. He stopped the boat and, having landed, climbed the mountain, bluish mist covered it up to a dizzy height. Inspired by the beauty of the place, Tu-Thuc composed these verses

"The golden sun is playing upon the tips of the branches,
The flowers of the grotto the guest welcomes with a smile
It is near the spring, but where are the gatherers of simples?
Around the fountain I see but the boatman at his oars
In the fulness of freedom, seated upon a cool seat, a few notes of the guitar,
Played carelessly in a boat, and a calabash of wine
If we asked of the fisherman from the country of Vo-Lang
The Village of the Fishers, where is it? Is it far from here?"

Having written this poem, Tu-Thuc gazed long at the scene. Suddenly he saw the mountain open, as though to invite him to enter the cavern. He did so, and when he had advanced a few steps he noticed that the mountain closed behind him, the cavern was enveloped in thick darkness. Tu-Thuc went on, feeling his way. The path was winding and narrow. At last he saw a faint light and little by little the daylight came. Raising his eyes, he saw above his head some very high peaks. Clinging to the rocks, he climbed without difficulty, and the path broadened out. When he reached the height the atmosphere became translucent, a radiant sun was shedding its light around. On every side appeared richly decorated palaces, green and smiling trees, as if in some place of pilgrimage.

Tu-Thuc was revelling in this enchanting scene when his attention was caught by two young handmaidens dressed in blue. One said to the other, "Here already is the son of the house." They disappeared to announce his arrival, but soon came back and, addressing Tu-Thuc, they said, "The Great Lady commands us to pray you to enter." Tu-Thuc followed the two girls, walked between brocaded walls, through doors covered with red lacquer, noticed the private rooms which shone with silver and gold, and read "The Palace called 'Heaven of Jade,' the storey called 'Light of Jewels'." Mounting upwards, he found a fairy clothed in white silk, who asked him to be seated in an armchair of white sandalwood. Then she said to him, "You delight in picturesque places; do you know what this place is?"

Tu-Thuc replied "Yes. As a true lover of lakes and rivers, I have wandered over many places, but I did not know that there was a country here fit for the immortals. Will you be pleased to tell me?"

The fairy smiled. "How could you know this place?" she

said. "You are in the sixth of the thirty-six grottos of the mountain Phi-Lai, this mountain traverses all the seas, without touching land anywhere, as the winds blow, it takes shape or it vanishes. I am the Fairy Terrestrial of the mountain Nam-Nhac and I am called the Lady Nguy. It is because I know that your nature is noble that I have welcomed you here."

She gave an order. The handmaids retired. A girl came in, and Tu-Thuc recognized the girl who one day had broken a blossoming branch. The fairy said, "My daughter is called Giang-Huong. When she went down to the feast of flowers she met with a serious accident and it was you who saved her. I have never forgotten this, and I now allow her to link her life with yours, to pay back the debt which she owes you." The fairies of all the grottos were invited to the wedding, which was celebrated with music and song. A year passed quickly in the kingdom of the fairies. Tu-Thuc had not forgotten his native land, and one day he said to Giang-Huong, "You know that I went out for a short walk and it is already long since I wandered afar. It is difficult to suppress altogether the human feeling of our hearts, I still dream of my old village. Let me return for a while to my home."

Giang-Huong seemed to demur, she hated the thought of separation.

Tu-Thuc insisted. "It is only a question of days or months," he said. "I shall tell the family what has happened to me and will come back without delay."

Giang-Huong was weeping as she answered. "I dare not invoke conjugal love to oppose my husband's wishes. But the limits of the lower world are narrow and the days and months very short, I am afraid you will not discover the familiar face of things and objects after this lapse of time."

She spoke to the Great Fairy, but she replied, though reluctantly. "I did not expect that he would still be so attached to the world of red dust. Let him go. Why be so distressed?"

She gave Tu-Thuc a car for his journey. Giang-Huong gave him a letter written on silk, and begged him not to open it till he had arrived. He mounted his car and she could not restrain her tears.

In the twinkling of an eye Tu-Thuc was there. Everything seemed different from that which he had known before—the houses, the men, the countryside. The two sides of the mountain ravine alone remained unchanged. He gave his name to the grey-beards of the village and enquired of them. At last one of them said. "When I was a little boy, I heard it said that my grandfather was so named. One day, more than 80 years ago, he disappeared into the hillside and never came back; it was thought

that he had fallen into some crevasse. That was at the close of the Tran dynasty and we are now ruled by the third of the Lê kings."

Tu-Thuc, feeling desolate and sad, wanted to return to the place he came from. But the car was changed into a phoenix and the fabulous bird flew away. Tu-Thuc opened the letter and read these lines:

"In the midst of the clouds two phoenix were united,
But the union of last year is now dissolved
On the seas men look for the tracks of the immortals,
But the times forbid them a meeting."

He understood that this was a final farewell.

Later on, clad in a light cloak, with a small conical hat on his head, Tu-Thuc entered the Yellow Mountain in the district of Nong-Cong in the province of Thanh-Hoa. He never came back. No one knew whether he ascended to the kingdom of the fairies or was lost in the mountain.

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A few explanations, necessary to a first reading, should be added in order to give an idea of the form in which the popular legend is regarded by the Annamite public, that of a history.

Accurate details are not wanting, the whole story of Tu-Thuc is enclosed by space as well as by time. I should say that I have suppressed several Annamite names, for too many might well weary the Western reader. The Annamites know not only the epoch (or rather epochs) when Tu-Thuc lived and the length of his stay in the supernatural kingdom (when one year is equal to 80 of ours), but also the name of his village, that of the district he administered, even that of the place to which he retired and which exists for all time. A mountain in the province of Thanh-Hoa in the district of Nong-Cong is called the Yellow Mountain as in the olden times, like the surrounding country. The mouth of the Thân-Phu, towards which Tu-Thuc was being rowed one morning, no longer exists, alluvial deposits have transformed the countryside, but the place is still known by the same name.

Such is the vivid impression which the Annamite reader or listener gets from the story of Tu-Thuc. One must remember that while the civilization of the country was extremely refined from the point of view of morals and art, science was only in embryo, and the critical spirit was very little developed. We can imagine therefore the credence which such stories, enriched as they are by details borrowed from reality and resting upon so much accuracy, obtain among the people of Annam, it only wants to believe in its dreams, which are so fascinating to a modern mind, but given to credulity.

Nor is that all. There is further delicacy in the art of it.

Everything that might seem improbable, supernatural, is exhibited on the same plane as the rest, insensibly in a continuation of that rest, which is not only probable in itself but is dated and localized, the reader does not notice at any stage the transition from the one world to the other. Thus in the beginning the young fairy is simply a girl. She breaks a branch of blossom, is arrested, kept prisoner and finally rescued. In all these details there is nothing that might not happen to a human girl. Later on, in the midst of the enchanted country (which, however, contains no element of unreality) it is Tu-Thuc himself who calls on the immortals in his verses. What is there then to be astonished at when the cavern opens? How can he hesitate when invited to enter? Thus it is that he does so *naturally*. When he reaches the kingdom of the fairies he is happy but not at all amazed, he is at home. Is there not a familiar savour, in itself quite human, in the brusque words of the handmaids "Here is the son of the house who has come." Then Tu-Thuc follows the girls, as a visitor would in an earthly palace. Lastly, when he finds "her who brings down perfumes," he says nothing. Is it not all quite simple, quite normal?

And that is not the whole of the fascination of our legend. In many ways it differs essentially from the legends that are to be met with in the world's folklore. The idea of a paradise where beings other than mortal live a happier life, can be found in the most primitive mentality, and has given birth to themes which have spread amongst all peoples. A man, overcome with fear in some solitary spot, meets immortals with whom he lives a certain time. When he returns to human society he sees that many years have passed, even one or more centuries, on the earth which is completely changed. Such are the materials on which are based many stories in the most diverse tongues. We may recall in particular the German legend of Tannhauser, the Scotch legend of Thomas the Rhymer, or the Irish stories where Niamh of the golden hair leads Oisín, son of Finn, through Tír na n'Óg, the country of immortality, to enjoy with him all the pleasures of the senses; three centuries pass like three days, but an indescribable longing comes over Oisín that day when from the top of the forbidden rock he sees below him Ireland, the land of his birth. We recall, too, the marvellously beautiful fairy which drew back to the earth Prince Aed, who ends by tiring of sensual pleasure and by begging St. Patrick to give him back to his country and his relatives. In this last legend we can observe the religious element which comes to be developed in the well-known legend of Tannhauser.

But this Annamite legend has none of these traits. Here there is no struggle between saints who personify the Christian Church

and pagan deities who represent physical pleasures. There is not even a conflict between sensuous love and the pure love in the souls of its heroes. Giang-Huong is no *sicle* with a magic charm, which overwhelms a noble knight; there is nothing comparable to the Venus of the German Tannhauser, or to the Sibyl of the Italian legend. She appears first as a beautiful girl, simply a girl. She comes back at the call of her mother and we are told nothing of supernatural fascination nor of divine charms.

Neither are we told anything of her loves with the fortunate mortal Tu-Thuc. Not for an instant is there any mention of their mutual feelings, either on the lowly earth or in the æthereal sojourn with the *Tiên*, not a word of legitimate joys, nothing of conjugal happiness, while we are far from being plunged into unbridled descriptions of sensations and of pleasures. The first time that any allusion is made to their common life, the only time that Giang-Huong uses the words "conjugal love," is when she is in tears over the impending departure of her husband. The Kingdom of the *Tiên* is not a sensual paradise, the bliss of it does not consist of the perfection or of the number of the pleasures of which one catches a glimpse here below.

Nor are we given a description of the kind of life led there. It is enough that that life is something different from that which we know, and that world something different from that which we see, a world without ordinary cares and troubles, a world of which we dream in the solitude of the mountain, near a grotto where the water murmurs its song or its plaint. An aspiration towards a better heaven, a thirst for purity, a longing for liberation without any precise notion of what is to be found on the other side—such as the soul knows from time to time, such as the Annamite soul often loves to bathe in—these are what the legend discloses, a popular legend, simple and transparent. It is not the illustration of a particularized doctrine. It is the reflection of a condition of the universal soul, and it is that that gives it its value, so largely poetic and so profoundly human.

We can now define the idea of *Tiên*. The *Tiên* are not actual deities. They are the men of old, men of a certain quality, of a chosen race, purer than other men, and who have become immortals. Destined to play the part of the elect and the blessed, they put off their humanity by degrees in the course of this life, often assisted by some *Tiên* whom they have met by chance in the windings of a path. It is easy to understand how hard it is to translate the word. There is no question of "genies" or of "gods." And fairies, at any rate in French, does not fit the *Tiên* who may have a masculine shape and face. For want of a better word, I have called them "immortals." But it must be understood that the word is used in a special sense.

Tu-Thuc is destined to become *Tiên*. He is called to the life of blessedness by reason of his own natural qualities. He is fond of drinking, but he is by no means a drunkard. Nor is he solely a musician, nor a poet, but rather a mixture of artist, poet, hermit and saint. But "hermit" implies prayers and austerities, and there is nothing of that kind in Tu-Thuc. Our *Tiên* to-be has nothing in common with hermits except a love of research and solitude, separation from the world and renunciation of this world's goods. As for the "saint," he rises to the Christian paradise after a life lived in strict conformity with the religious law, he is then allowed to contemplate God face to face, and his happiness consists in singing everlastingly the praises of the Lord. Tu-Thuc has not led an exemplary life, the only good deed which he has done on earth was to save a fairy girl without knowing who she was. Moreover, this detail—the only positive action of his life—is necessitated by the demands of the fabulous, there must be only the minimum of romance in a legend. The trend of the story requires that Tu-Thuc should be attached to the Other Kingdom by some kind of tie, a human tie, love, recognition, or the chance encounter of a moment. For the rest, Tu-Thuc is but a creature of refinement, who is not made for this world and who ends by getting away from it. If he becomes *Tiên*, it is not in virtue of an edifying life but simply because he has not had a life on earth.

However, as we have seen, he is not altogether freed from his attachment to this world of dust, from his place above the clouds he thinks of his family, his friends, the country of his birth. That is what brings him nearer to us, that is why his adventure moves and enthrals us. And so the legend of Tu-Thuc is only a dream-form, it is the reflection and the voice of all simple hearts whom the world deceives, at any rate at certain times, and who long for something else—a little peace, a little purity, yet nothing systematic, no belief crystallized into precise dogma. It is exactly the condition of the Annamite soul at many crises of his life, and so we can understand how this legend of nostalgia has arisen, as well, too, does it explain its place among the people of Annam for so many generations.

THE KESHUB CHUNDER SEN CENTENARY

BY VISCOUNT SAMUEL

THE custom of celebrating centenaries prevails throughout the civilized world. It is a good custom, for such celebrations recall the memory of illustrious men and women, help to reanimate their achievements and revivify their messages. Usually we celebrate centenaries of sovereigns or statesmen, poets, scientists or philosophers; but it is right that we should celebrate also the centenary of one who has been illustrious as a religious leader and social reformer.

Keshub Chunder Sen was one of the great religious initiators of the modern world. He was a man of lofty, spiritual temperament, but not one of those who therefore renounce the world. He was too wise and too good a humanitarian to take the path of withdrawal and the abandonment of social duty. On the contrary, he spent his life in strenuous and incessant effort to spread beneficent ideas.

I have long been deeply interested in the Brahmo Somaj, and so far as I understand the teaching of Keshub Sen, who was for so many years its leader, the central ideas are these. Religion is not to be regarded as something merely historical, given once and for all at some distant period in the past, but is rather a living force in the present, as much a vital concern for our generation as it has been for any previous generation. Religion is not a matter of rigid dogma, fossilizing ideas that prevailed in an age before science. Rather should it embrace all the knowledge painfully acquired by mankind through the centuries, and should be adapted to the conditions of life of the present time.

Further, it is wrong for each creed to emphasize its own particularized and distinctive doctrines so that a spirit of separatism, or even of antagonism, is created between the various faiths. Religion is something more than the religions. Yet, in seeking an ultimate unity, we ought not to insist upon uniformity. We should not be forgetful of the variety of national traditions and the needs of different temperaments.

Keshub Chunder Sen was an Indian and proud to be the servant of India. He realized to the full her own special needs. He insisted upon the urgent necessity for changes in the ancient laws and customs of India. Caste and Untouchability was an outstanding instance. The status of women was another. No one can estimate the injury done to the Indian people by child marriage, and by the denial of opportunities for womanhood. It has been well said that "no nation can permanently rise above

the level of its women " And Chunder Sen never wearied in emphasizing these truths

Further, he incessantly attacked the evils of idolatry and superstition, and that message is still needed in a land where those evils still influence the lives of vast masses of the population, confusing their ideas and warping their judgments. He contributed also to the great movement which, in our own times, has gone far to fortify the national self-respect and the patriotic spirit of the Indian people. He dwelt upon the importance of nationalism, but was not among those who make the mistake of considering it necessarily opposed to internationalism. The two, wisely conceived, may coincide, but it has been rightly said that "Internationalism must rest upon a satisfied nationalism."

All these matters are of vital import to modern civilization. In the long run it is Ideas that rule. Practical politics are important. I have devoted almost all my life to political affairs, but I have come to see that, without depreciating the importance of action in the sphere of politics and administration, even more important are the ideas that underlie and direct and control politics. In the matters with which Keshub Chunder Sen dealt, he touched the very mainsprings of the contemporary world.

I feel, therefore, that the Brahmo Samaj Movement has rendered great service to India, and if its influence were to spread among a larger proportion of the population, that service would be greatly enhanced. And since India includes one-sixth of all mankind, the indirect effect upon the world as a whole must be significant.

In the admirable *Life*, written in connection with this centenary by Dr. P. K. Sen, I have read of the visit paid by Chunder Sen to England in 1870. In his many addresses here he proved himself a frank critic of British rule in India. We are always ready to be admonished for our own good, and his criticisms were in no way resented. He urged strongly the need for a reform in the methods of British administration in India, and for an enlargement of the liberties of the Indian nation, but he looked forward to the maintenance of a friendly co-operation between the two peoples. He had interviews with many of the leading personalities of the time, including two who must be regarded as among the greatest—Gladstone and John Stuart Mill. He was received with much kindness by Queen Victoria, and it is interesting to recall that there was present at that conversation one who is still among us—H. R. H. Princess Louise, Duchess of Argyll.

Now that his centenary is being celebrated in India, it is well that an echo should be heard here in London; and that here also some of those who care for the cause of spiritual, social and political progress should meet together to pay tribute to the memory of a great pioneer.

KESHUB CHUNDER SEN By P K Sen (Published under the auspices of the Keshub Chunder Sen Birth Centenary Committee, Calcutta)

(*Reviewed by* PROFESSOR L F RUSHBROOK WILLIAMS)

To the student of modern religious movements in India, Keshub Chunder Sen will always remain a figure of considerable interest, round whose positive achievements much controversy has centred. It is undeniable that he found the Brahmo Samaj a united movement, if a movement remarkable more for the loftiness of its ideals than for the wide range of its appeal. He left it split into three sections, the Adi, the Navavidhan, and the Sadharan. The first represented the old Brahmo Samaj, from which he himself split off when he enlarged the scope of his religious outlook beyond the tenets of reformed Hinduism, the last split off from him, when a section of those who had originally followed him into secession objected to his views concerning the force of Divine commands conveyed to a leader, and desired to substitute for his sole authority as judge of matters doctrinal the consent of the majority of the community. The schism became inevitable when Keshub Chunder, for reasons which most impartial persons will consider good and sufficient, consented to the marriage of his fourteen-year-old daughter with the sixteen-year-old Maharajah of Cooch Behar. Actually, the affair represented no breach of the tenets of the Brahmo Samaj, for the Maharaja sailed immediately to complete his education in England, and it was from the first understood that consummation was to be deferred until the parties came of age. But the accusation that Keshub Chunder was a law unto himself became thereafter more difficult to answer, and it is scarcely surprising, though doubtless regrettable, that the determination of the dissidents to secede should have been fortified.

These and other controversies are rapidly fading into the mists of the past, and it is well that the occasion of the centenary of Keshub Chunder's birth has come, to enable us to re-assess, if we may, the personality of the man himself and the value of his message. For it is of the essence of his spiritual genius that he was too great to remain within the four walls of one temple, however liberal its proportions, he needed the free air of Heaven to give full play to the universality that was in him. Of necessity, therefore, his influence was to some extent disruptive, tending to expand, to the point of dissolution, any tenets too definite to include the personal individual inspiration of the moment. Keshub, in fact, was of the line of the prophets rather than of the priests, George Fox would have recognized in him a kindred soul, and he would not have found the "wrestlings in prayer" of the Puritans unfamiliar. Such men have never taken kindly to the recognition of any limitation of the efficacy of direct inspiration, and thus have always chafed at the imposition upon themselves of the restrictions that lesser minds regard as essential. Keshub Chunder, with his boundless charity, compelled no man to anything except to love God and his fellows, yet the mere magic of his personality induced many to follow him into paths

which could only with difficulty be beaten into a high-road for the passage of the multitude. His own account of his early struggle to discover God speaks eloquently of the peculiarly personal character of his revelation.

"English education unsettled my mind and left a void, I had given up idolatry but had received no positive system of faith to replace it. And how could one live on earth without a system of positive religion? At last it pleased Providence to reveal Himself unto me. I had not a single friend to speak to me of religion, God and immortality. I was passing from idolatry into utter worldliness. Through Divine grace, however, I felt a longing for something higher, the consciousness of sin was awakened within me, sin was realized in the depth of my heart in all its enormity and blackness. And was there no remedy? Could I continue to bear life as a burden? Heaven said, 'No! Sinner, thou hast hope,' and I looked upward and there was a clear revelation to me. I felt that I was not groping in the dark as a helpless child, cast away by his parents in some dreary wilderness. I felt that I had a Heavenly Friend always near to succour me. God Himself told me this—no book, no teacher, but God Himself, in the secret recesses of my heart. God spoke to me in unmistakable language and gave me the secret of spiritual life, and that was prayer, to which I owed my conversion. I at once composed forms of prayer for every morning and evening, and used them daily, although I was still a member of no Church on earth, and had no clear apprehension of God's character and attributes. I felt profoundly the efficacy of prayer in my own experience. I grew in wisdom, purity and love. But after this I felt the need of the communion of friends with whom I might be enabled, in times of difficulty and doubt, to receive spiritual assistance and comfort. So I felt that not only belief in God was necessary, but I wanted a real brotherhood on earth. Where was this true Church to be found? I did not know. Well, I established in my earlier days a small fraternity, in my own house, to which I gave the somewhat singular but significant name of "The Goodwill Fraternity." I did not allow myself for one moment to honour sectarianism, but preached to my friends these two doctrines—God our Father, every man our brother. When I felt that I wanted a Church, I found that the existing sects and Churches would not answer my purpose."

The Brahmo Samaj came nearest to his requirements, but, as we know, the dynamic impulse he lent to it disrupted its fabric into three portions.

In very truth, there was no sect or community that could contain Keshub Chunder, and if we are to estimate his contribution to the religious life of India, we must take account of the stimulus he afforded to Vaishnavism, and to Christianity, as well as of the impetus he lent to the Brahmo Samaj. His revival of *Bhakti*, and his adoption of *Sankertan* accompanied by the traditional accessories of the *Khole*, *Karatal*, and *Ektara*, must be considered his answer to those who argued that true religion was beyond the ken of the unlettered masses. Indeed, it is not without significance that many of the photographs of Keshub Chunder taken subsequent to 1867 show him holding an *Ektara* himself.

It is no matter for wonder that Keshub Chunder, when he visited England in 1870, should have produced upon the religious leaders of almost every sect

the most profound impression. In the words of Martineau, he showed Christian England that the essence of Christianity lay, not in the doctrinal and historical machinery of the Churches, but in the spirituality of which that machinery was merely the vehicle. His contacts with some of the greatest personalities in the land—Queen Victoria herself, Gladstone, Dean Stanley, Max Muller, and many others—produced an indelible impression on the best minds of contemporary Britain. Indeed, it is scarcely an exaggeration to say that many persons in all ranks of society derived an entirely new conception of India and of her people from their meetings with the gentle, tolerant, yet fearless prophet of Divine and human love. Keshub was far ahead of his age in his conception of the true relationship that should subsist between Britain and India. A staunch Nationalist, he insisted upon the dangers inherent in the policy of encouraging, or even forcing, the adoption by the Indian population of customs, manners and institutions which belong properly to England. Even in the sphere of education, he insisted that what was required was the union of the best things of East and West, rather than the displacement of one by the other. The two countries, he insisted, had been linked by Providence, not that one should be subordinated to the other, but that each should make its contribution to the common whole. He was strongly opposed to such marks of the subordination of Indians as were reflected in contemporary institutions and practices, and his manly assertion of the dignity and antiquity of the culture of his country was as admirable in its temper as it was unimpeachable in its moderation.

Dr Sen's pious tribute to the great Keshub Chunder is worthy of the occasion that has produced it. The author has collected much useful material, which he presents with dignity and simplicity in compact compass. It constitutes an excellent guide to the study of a life of rare spiritual significance.

SOME ASIATIC DISPLAYS AT THE GLASGOW EXHIBITION

I THE BURMA PAVILION

By M. MYAT TUN

(Supervisor, Burma Pavilion.)

THE Burma Pavilion, built in the characteristic style of Burmese architecture, entirely in teak, with its red-ochre teak shingle roofs, introduces the colour, charm and atmosphere of Burma to Scotland

Its intricate and ornamental carved façade, designed and constructed by Burmese craftsmen in Burma, with flower pattern carvings symbolic of Burmese rhythmic dancing, the variety of interesting exhibits, arrestingly displayed, and the collection of valuable ivory carvings, silverware, bronze and lacquer-ware, have earned for the Burma Pavilion a great measure of praise and admiration. By virtue of its architecture and by the assembly and display of the most representative exhibits of its arts and crafts, its industries and agricultural products, it has enabled the public to obtain a correct impression concerning the country, which can be supplemented by means of brightly coloured brochures, posters and leaflets and by conversation with representatives from the country, both Burman and British. Personal contact is a valuable and indeed essential addition to mere display and literature.

To quote from the message of Mr Neville Chamberlain, the Prime Minister "Throughout the world exhibitions are an accepted medium for displaying in miniature the culture, life and industry of the countries in which they are held. But the members of the British Commonwealth of Nations are in an exceptional position by virtue of the special relationships which bind them together. It is for this reason that we are able to present here a picture of the many countries of the commonwealth."

"The Exhibition has, therefore, a special significance, it has also, I think, a special value at this time. For now, more perhaps than at any other time, there is need for mutual understanding and co-operation between the nations.

"By helping the people of the Empire to know and understand one another, it will strengthen their power of common effort."

The Burma Government and Sir Harry Lindsay, Director of the Imperial Institute, deserve great credit for the organization of Burma's representation. It is in the spirit of the Prime Minister's message that Burma has participated in the Exhibition. By illus-

trating the progress of Burma, by demonstrating the resources and potentialities of Burma, by fostering Empire trade and a closer friendship among the peoples of the British Commonwealth of Nations, Burma shows her appreciation of the objects of the Empire Exhibition.

The underlying idea of the exhibition work may be summarized as being an attempt to represent Burma as a living reality. The nebulous geography of the public is translated into a living, human story of the culture, life and material welfare of a people. The subject of geography has progressed since it extended its teaching from a collection of disconnected facts of boundaries, rivers, mountains and towns, to the economic life of the people. It has shifted its emphasis to the interdependence of the human and the material environment.

The intention of the Burma Pavilion authorities is to regard Burma much in the way of an economic historian and represent the country in an attractive way which will hold the interest of the public just as the screen and the Press do. The secret of success is similar in both cases—an ability to interest the public in the story that is being told.

At the entrance the Burma Railways Kiosk affords a picturesque introduction to Burmese architecture. It helps to create an essentially Burmese atmosphere. Hexagonal in shape, it is built entirely of teak, in the "pythat" or multi-tiered roof style of architecture, with carved ornamental brackets and caves, lotus and other floral designs to symbolize the virtues of sincerity and truth. The delicate spire, surmounting the kiosk, with its exquisite hand-carved symbols, evokes appreciative comment both from the visitor and the expert in woodwork.

Close by, the Port Commissioners of Rangoon exhibit a panoramic model of the Port of Rangoon. The motto reads "*Dum Defluat Amnis.*"

Today the modernity of the city of Rangoon is shown by the number of ocean liners, seaplanes, wharves, cranes, trams, railways, modern offices and public buildings.

Rice and timber together have helped to build the modern capital of Burma. Rice is given a most prominent display in keeping with the economic importance of rice to Burma. Burma being the world's greatest exporter of rice, it is natural that the Government Agricultural Department exhibit not only the present qualities of rice but also new and improved qualities of grain, the result of research at the Government Research Stations like Hmawbi, demonstrating the potential production of rice in the future. This is done so that the demand for high quality rice, which is the chief feature of the European market, may be stimulated and production diverted to channels where the profit

is highest. Thus it serves the double function of informing the public as to the latest improved grains and the consequent demand, transmitted through the retailers and wholesalers, will have its reaction on the production and the sale of the article.

It provides also a convenient means of collecting essential information by personal contact with the individual buyers, on the important subject of consumers' demand, which is one of the most vital factors in the fixing of prices. To a country like Burma, whose national wealth is almost entirely dependent on the price obtained for the one-crop product of rice, the necessity of publicity and the collection of marketing and statistical information is of paramount importance.

A comprehensive diorama and photographs on rice production, exhibited by the Burma Rice Shippers, ensure both commercial and educative value. Samples of the mineral resources of Burma are demonstrated by the Bawdwin Mines and also the Mawchi mines.

The Shan States have six models dressed in typical costumes, etc., depicting some of the races in that area.

The Burmah Oil Co., by means of a well-detailed diorama of the oilfields at Yenangyaung, an old-fashioned hand-dug oil well contrasted with a working model of a modern machine-dug oil well, and another diorama of the Syriam oil refineries and an illustrated brochure, have vividly portrayed the important part oil plays in the national economy of Burma and the industrial organization and welfare work of the company.

The Irawaddy Flotilla Co., in association with the Bibby and Henderson Shipping Companies, to encourage the public to visit Burma, have had the happy idea of exhibiting original water colours by Mr. Talbot Kelly. The public are thus able to learn to appreciate the beauty of Burmese scenery, the quiet peace of the riverside village with its golden pagoda and monasteries (kyaungs) and rest houses (zayats).

The timbers of Burma are effectively displayed in the Pavilion panellings of padauk (*Pterocarpus macrocarpus*), laurel (*Terminalia tomentosa*) and yinma (*Chickrasy* or *Chukrasia tabularis*). There are samples of flooring of pyinkado, gurjun and teak (*Tectona grandis*).

Teak (*Tectona grandis*), one of the main exports of Burma, is exhibited very adequately. A zayat (Burmese rest house), all in teak, has been built to contain the various teak exhibits.

Many thousands of hand-carved teak elephants, carved ash trays, flower bowls, labelled "genuine Burma teak," have been eagerly purchased by the public. These undoubtedly serve as an excellent advertisement for Burma teak.

Six miniature panoramic models of a hall, garden, library,

railway waiting-room, docks and a bank counter illustrate the uses of *teak*. Excellent in their detailed work, these miniatures will probably serve as a guide for future exhibits and exhibitions.

Their very smallness makes them popular exhibits. They offer the additional advantages of space, economy and cheapness.

The best of Burmese craftsmanship may be viewed at the Cottage Industries Section, where there are silver bowls, peacocks, graceful ivory sailing boats, complete with sails and ivory chains and anchor, *chinthés* or leogryphs, Burmese bronzes, and gold, red and black lacquer-ware.

Praise and admiration have been lavished on these products of the arts and crafts of Burma. Hand-woven silks of Mandalay and Amarapoora brighten the Pavilion with their lively colours and original design.

Keen interest in Burma has been shown in the Press. In the words of Sir Harry Lindsay, Director of the Imperial Institute, "Burma may well be proud of her show at the Empire Exhibition."

Lady Cochrane (the wife of Sir Archibald Cochrane, Governor of Burma), on her second visit, remarked, "Burma has been an unqualified success."

For the Exhibition, as well as for Burma, the Burma Pavilion has achieved in full measure the aims and objects of its creators.

II MALAYA

BY W. N. SANDS

(Officer in Charge of the Malayan Court of the Colonial Pavilion)

The natural resources of Malaya, the suitability of climate and soil for a wide range of crops, and the cosmopolitan population have resulted in a multiplicity of industries of varying importance such as perhaps cannot be equalled in many other countries. The task of the Exhibition Committee in Malaya in selecting exhibits which will give the visitors to the Exhibition an insight into the industries and resources of the country and of the life of the inhabitants has been a difficult one, they have had to be content to select as subjects the more important industries and a few examples of native industries, relying very largely on photography to depict the scenic beauties of the country and the life of its varied inhabitants.

Within the limits of the space available in the Malayan Court, it has been impossible to give a comprehensive range of exhibits to show the industrial and social life of Malaya. The organizers have therefore confined such exhibits to these aspects of transport

Firstly, the Government railways of Malaya; secondly, water transport by a model of the Singapore harbour; and thirdly, air transport by two models of the new million-pound airport in Singapore, which was built on a reclaimed swamp.

AGRICULTURE

Malaya has achieved renown by reason of agriculture and mining. While the importance of rubber by far overshadows other crops—for there are over $3\frac{1}{2}$ million acres under this crop—the country has proved suitable for such a multiplicity of crops that it is impossible adequately to do justice to them all in the confines of this Exhibition. Three crops have been chosen for special presentation, while a number of other crops such as coconuts, rice, oil palms, areca-nuts, and spices are dealt with by means of specimens and photographically.

Attention is therefore directed to exhibits concerning the following agricultural industries rubber, which has made Malaya famous, pineapples, which grow luxuriantly and supply a cheap and absolutely pure canned fruit product, and tea, a young but thriving industry which has developed in recent years by reason of making more accessible the mountainous region in the centre of Malaya

Rubber

The large realistic diorama depicts a typical scene on a rubber estate, where Indian labourers of both sexes are seen tapping rubber trees and transporting the latex. The rubber trees in this diorama are real.

Adjacent to this diorama is a scale model of a modern rubber factory, where the milky latex from the field is converted into smoked rubber sheets, in which condition they are shipped.

Pineapples

Although the pineapple is not the second agricultural industry in Malaya, yet it is of considerable importance. The main areas under this crop are in the State of Johore, where there are also a number of canning factories. Factories and areas under this crop also exist in Singapore Island and in Selangor. Pineapples flourish in Malaya. Some idea of this may be gathered from the fact that normally the wholesale price of the canning pine is from 2s. 6d to 5s per 100. At the present time there is a glut of fruit and the price is as low as 2s. a hundred fruits. The fact that pineapples flourish so exceedingly in Malaya and that labour is cheap and plentiful results in the fact that Malayan canned pineapples are the cheapest canned fruit on the market.

The large diorama shows the interior of a pineapple factory in the State of Johore. Great care is exercised to ensure that pineapple canning is carried out under hygienic conditions. The design of the factory must comply with stringent conditions laid down by law. The sanitary requirements to which the factory has to conform prescribe the materials of which floors, walls, pillars and tables in the factory are to be made, and state, *inter alia*, that the walls of all rooms in which the cut fruit is handled shall be lined with white glazed tiles to a height of 5 feet and that there shall be a minimum of 50 square feet of floor space for every operator in the cutting room. The operators must wear clean white suits and caps, and adequate baths and sanitary arrangements must be available. It is also usual for operators to wear rubber gloves when handling cut fruit.

Interesting exhibits which may suitably be mentioned here are canned mangosteen and rambutan, the latter resembling the litchi in flavour.

Tea

There are now a number of tea estates in many parts of Malaya in addition to several hundred acres cultivated on smallholdings. The yields obtained on Malayan estates and the quality of the tea compare favourably with that in other countries with similar conditions.

Malayan tea is exported to the United Kingdom and also finds favour in Malaya, where it is being sold in increasing quantities.

After manufacture the made tea is sorted into the five different grades to meet special market demands. The grades are as follows: broken orange pekoe, orange pekoe, pekoe, fannings and dust.

Cutch

Mangrove bark extract is the tanning substance made from the bark of trees found in the extensive mangrove swamps of British North Borneo, Brunei and Sarawak, and is used chiefly for the tanning of leather and the preservation of fishing nets and sail-cloth. The work of collecting the bark is done by natives, who cut down the trees and strip off the bark, which is then transported to the factories.

To extract the tannin, the bark is crushed by machinery and then leached or boiled at various temperatures through a series of steam-regulated vats. The extract thus obtained passes on to an evaporating plant, where, by various processes of vacuum drying, the liquid is concentrated into a viscous congealed mass and run off into moulds. Air-cooling completes the process, and the solidified contents of the mould are placed in the packing case or sack.

Mangrove bark extract is one of the principal jungle products of British Borneo and is shipped to most countries of the world. The bark from which it is made contains properties which are particularly effective in withstanding the deteriorative action of sea water, and therefore mangrove bark extract makes an excellent preservative for fishing nets. In blend with other extracts it provides a first-class tanning agent for leather.

MINING

About one-third of the world's tin comes from Malaya. The tin ore is obtained by various methods, from the primitive methods of the Chinese in working the deposits in open wooden pans to modern dredges and hydraulic plant.

The fine working model shown was supplied by the London Tin Corporation and depicts the modern method of tin dredging.

OIL PRODUCTION

Although no mineral oil is found in Malaya, important supplies occur in the neighbouring State of Brunei, in Borneo, which is administered by the Malayan Government. The Brunei exhibits comprise (a) a scale model of a production block and includes separators, field collecting and storage tanks, and (b) a model showing an imaginary section of a well. The excellent models were made and staged by the British Malayan Petroleum Company of Brunei, who also display samples of the different grades of crude and refined oil produced.

ARTS AND CRAFTS

Weaving

The hand-woven silk cloth of Trengganu has been famous for generations. It is a true cottage industry, and practically every village house in Kuala Trengganu town and in the immediately surrounding country districts has its loom. The weaving is done entirely by the women. An excellent diorama shows a verandah of a Malay house in which are life-size figures of women at work weaving gold-thread silk fabric on a native primitive loom, whilst the painted back and side canvases depict typical scenes on the east coast of the country. The natural silk yarn is bought from China and dyed to the required colours. The dyes are synthetic—the art of obtaining the local natural dyes that were once used having now been almost entirely lost. There is a local Arts and Crafts Society which devotes a great deal of attention to obtaining and distributing fast dyes to

weavers. The products of the Trengganu looms command a large sale throughout Malaya, and the extent of industry, which was given a considerable fillip when the textile quota system was introduced, can be gauged by the fact that locally woven silk sarongs and cloth to the value of no less than £35,000 were exported in 1936. This may not appear to be a very large figure, but although the State of Trengganu is large the population is sparse, and the value of silk cloth sold therefore represents a very material and welcome addition to the income of the Malay inhabitants.

An attempt has been made to show the beauty of Malayan design and workmanship and the possibility of adapting these Eastern fabrics in Western dress-making and upholstery.

The Malay woman is also adept at needlework, an art which she has for long used for the adornment of her person. Examples of gold-thread work is evidence of her skill in this direction, while the adoption of gold thread to the decorations of ladies' hand-bags shows that she is prone to adopt Western patterns with delightful results.

Silverware

The manufacture of articles in silver is an old industry in Malaya, which at one time was especially encouraged by Malay royalty, who kept silversmiths in their employ. In recent years the competition of imported articles of silver perhaps has rendered Malayan silver less popular. The local workman has countered this competition by putting his work into articles for which there is always a demand. Specimens of silverware from Kelantan and Brunei are exhibited, but there are clever Malay craftsmen in most of the other States.

Brassware

Brunei is famous for the manufacture of gongs, four beautiful specimens of which are exhibited.

Walking Sticks

Although less fashionable than formerly, the Malay still finds a market for walking sticks. This trade flourishes in the State of Kedah, but examples of this industry from the State of Pahang and Selangor are also exhibited.

Plaiting in Grasses, Bamboo and Leaves, etc.

An old-fashioned village industry is that of weaving mats, hats, bags and other useful articles with the dried leaves of the screw

pine and other plants. The designs used in this work, both of colour and of plaiting, are most attractive. Examples of this work were made in the State of Negri Sembilan, Trengganu and Pahang. The work is that of Malay women. More recently the Government has introduced basketry as a handicraft in vernacular schools. Samples of this work exhibit once more how clever the Malay is with his hands. The specimens exhibited were made at the Sultan Idris Training College for Vernacular Teachers in Perak, from which college also came the exhibits of pottery and the stencil printing on silk cloth.

Wood Carving

In olden days Malays carried a wavy kris as a weapon; now it is carried as an ornament. The art of kris-making is dying out, but a few examples are shown of recent workmanship. The blades were made in the State of Kelantan, while the handles and sheaths were made in the State of Negri Sembilan. The designing of blades and fashioning of the handles is beloved of the Malay, who today gives this care to the design of the "parang," a handy knife which he carries and uses for a hundred useful purposes a day—cutting wood, weeding, cutting his path through the jungle and paring his nails! The wood carving of the Malays is of no mean merit, either in design or execution. The art is frequently put to use in the construction and adornment of their homes. This dexterity is also shown by the model of a Malay fishing boat, which also serves to draw attention to the fishing industry. The seas around Malaya abound with fish—and the Malay, a sea-loving people long before they took kindly to the more peaceful pursuit of agriculture, is a clever boat-builder and a splendid seaman.

TRANSPORT

Railways

The Federated Malay States Railways exhibit consists of two models—viz, a one-sixth scale model of a day and night first-class air-conditioned coach and a one-forty-eighth scale model of the Central Railway Offices in Kuala Lumpur, the capital of the Federated Malay States.

The whole of the work connected with the construction and lay-out of this striking Court, together with the reception and staging of the exhibits, was carried out by the Malayan Information Agency in London.

Singapore Harbour

Our model shows the harbour of Singapore with the premises of the Singapore Harbour Board.

The approach of the harbour of Singapore is one of the most beautiful in the world. The harbour itself is practically landlocked by islands and these afford such protection that until the reconstruction of the wharves was put in hand some 22 years ago, the berthing accommodation consisted only of wooden wharves on wooden piles.

Singapore has been designated "the Crossroads of the East," and a wonderful variety of vessels are to be seen in its harbour: large ocean-going vessels and cargo steamers from many countries to the Chinese junks and native six-oared fishing boats. During the year 1936 merchant ships representing a tonnage of 14,880,561 tons entered the port.

The Singapore Harbour Board controls all the public wharves and dry docks in Singapore, and has over 690 acres of land. Assets and capital outlay of the Board exceeds 8½ million pounds. The Board has its own Police Force and Fire Brigade fully equipped with modern motor fire floats, motor fire engines, smoke appliances, etc. The Board lights its premises throughout and controls all traffic thereon, does all road making and repairing. It also undertakes the entire sanitation and scavenging of the premises and maintains a medical staff and motor ambulance.

SINGAPORE CIVIL AIRPORT

The two models depict the site of the Singapore Airport as it was in 1931 before any construction work began and as it is now with the airport completed.

The striking features of this great public work are that

- (i) Two hundred and sixty-two acres of unhealthy mosquito-breeding swamp have been eliminated.
- (ii) It provides combined land and seaplane accommodation.
- (iii.) It is only two miles from the centre of the town.

The main reclamation entailed transporting and consolidating 7½ million cubic yards of earth. The earth was quarried from hills 5 miles from the site and transport was by a light railway.

The whole scheme was carried out to designs and plans made by the Department of Public Works, Straits Settlements, the terminal building, hangars and other ancillary buildings being to designs by the architectural branch of the Department. The main reclamation, which took five years, was carried out by the Department of Public Works by direct labour, an average force of

1,200 labourers was employed throughout the period. The buildings, slipway and jetty were carried out by contractors, European and Asian, to the designs and under the supervision of the Department of Public Works, while the necessary dredging and other marine work required to provide the seaplane anchorage were carried out by the rural marine branch of the Department, using departmental plant and labour

There is a tablet in the main hall of the terminal building which reads

“The site of this Airport was selected by Sir Cecil Clementi, G C M G , Governor and Commander-in-Chief of the Colony of the Straits Settlements, 1930-1934, whose vision foresaw its possibilities and whose courage and ability secured its adoption ”

This pays a fitting tribute to the originator of the scheme

The airport was formally opened for traffic on June 12, 1937, having cost approximately £1,000,000

Of interest and pleasing in its decorative effect is the series of flags and crests of the States

III INDIAN EXHIBITS IN THE WOMEN OF THE EMPIRE PAVILION

There are some very pleasing exhibits in this section both from British India and the Indian States

The Government School of Arts and Crafts in Lucknow displays a series of twelve paintings

From Bombay comes an embroidered picture, entitled “Repose,” on satin sewed in lady’s locks

The Widows’ Industrial Home in Rajputana is represented by dolls illustrative of a marriage party procession

The exhibits of the Bengal Home Industries Association include a golden Muga Kushida of material described as being identical with that used by King Francis I for lining his pavilion at the Field of the Cloth of Gold. There are also Bhutanese woven pieces.

Madras shows a white shawl of cotton lace.

Among the Indian States Baroda figures prominently The exhibits in this section include a fan made from glass beads with animal figures, a garland made from cloth, a toran (door decoration), wall-hanging decorations, a sari embroidered with stars, and a kamkha (blouse) with gold embroidery.

Kashmir shows a white shawl faced with gold.

THE LEAGUE OF NATIONS AND WORLD PEACE*

By H H THE AGA KHAN

THE world situation of to-day has struck such blows at the prestige and hopes which in the early years were linked with the League of Nations that many supporters of the institution have lost heart and confidence in its future. It will be appropriate, therefore, in this Peace Pavilion and at an Exhibition so illustrative of the arts of peace as pursued in Scotland, to bring forward some considerations which may encourage us to go forward with the task of upholding the League and the ideals and conceptions of which it is the expression.

The first and most cheering of these considerations is that these ideals and conceptions are themselves imperishable. They are as ancient as the search of man for God. All the great religions of the world have taught the brotherhood of man, and peace and goodwill to all men. Muhammad, indeed, went further and sought to establish a human brotherhood world-state. Great philosophers down the ages have never allowed these ideals and generous impulses to be forgotten. For many years prior to the War there were international discussions on the limitation of armaments and the reign of law instead of force, and a number of successful endeavours to apply the principle of arbitration to international disputes. The Permanent Court of International Justice at The Hague was planned in pre-war days, and has to its credit the settlement of some international differences. The two Hague Conferences were early efforts to form a League of Nations.

The next consideration is that of the indispensability to human progress of the conceptions on which the League is based. The War threw a lurid light, not yet quenched, on the insecurity from which the most civilized nations of the world have suffered in their relations to each other. Nothing was writ larger on the history of the struggle than the fact that the immense havoc it wrought would be utterly vain unless international life were reorganized on a basis of justice, equality and public law in replacement of the law of brute force. Without such reorganization there was the prospect of recurring wars, each more devastating than the last, on account of the resources of science being increasingly available for both offensive and defensive conflict. The end of such recurrent wars must be the collapse, not only of our modern civilization, but perhaps even of organized society.

* Based on an address in the Peace Pavilion of the Glasgow Exhibition, July 8, 1938.

Thus the provision of a League of Nations became a necessity. It had to be made in haste, and from its inception there were certain factors which were a heavy handicap to success. Though President Wilson had done so much to shape the Covenant, the United States—the strongest individual sovereign Power in the world and possessing vast resources—refused its co-operation. Further, the attachment of the Covenant to the Peace Treaty led to the German feeling, so fully exploited later, that the new institution was in essence a League of the victors against the vanquished. But the statesmanship of Stresemann brought Germany into the League later on, and in its early years the League handled with success a number of difficult problems, some at least of which would most probably have led to war in pre-League days. These problems included the Upper Silesia and Saar settlements, the regularization of the Dardanelles and the Bosphorus passages, the German and Austrian War Debt adjustments, and the admission into the League of Egypt, Afghanistan, Turkey and—last, but by no means least—of Russia.

Unfortunately, however, the outlook changed before the League succeeded in changing the mentality of the generations brought up under the old power politics or to educate sufficiently the rising generation (which had little or no personal recollection of 1914-18) before other voices and ideologies clamoured for hearing and demanded acceptance. In the Far East, in Northern Africa and on the Continent of Europe there were disavowals of the authority of the League, and three great Powers forsook its ranks.

These events led men to question whether the League was endowed with sufficient strength to save mankind from the disaster of another general war. There were in this country Isolationists and men wedded to the old imperialistic ideas only too ready to exploit these doubts. It was suggested that, having failed in the main objectives, the League might limit its activities to the many secondary purposes it has so well served for two decades—those relating to labour, health, social and economic advance, and the suppression of the drug and white-slave traffics.

To such suggestions of abandonment of the primary purpose of the League an emphatic negative must be returned by all believers in human progress. Whatever may be the weaknesses the years have revealed in the structure of the League, whatever desertions there may have been from its ranks, our task is to preserve this instrument, saving the world with loving and pious care. There are chapters in human history which show that later generations have derived enormous benefits from the maintenance of great movements and institutions during phases in which they have been incapable of effecting the good for which they were designed. It is a law of life that men should labour and endure

to uphold ideals and institutions, and that other men should enter into their labours. If this is our lot we may take encouragement from glancing at a period of English history of a not dissimilar kind. During the reign of the Tudors such representative institutions as had existed became merely nominal assenting bodies for registering the will of the sovereign. Yet all the outward forms of their implied authority were maintained. Later, when the Stuarts were on the throne, the internal development of the nation had gone far enough to make the maintenance of such autocracy an impossibility. The institutions themselves were infused with new life, and stage by stage their power grew through generations into the effective sovereignty of Parliament, and thus the ultimate purpose of their establishment was achieved. There can be no doubt that even the formal maintenance of those institutions in the days of autocracy prevented a general decay of the ideas of which they were the symbol.

Similarly to-day the League must not be allowed to renounce the great ideal of being the Parliament of Nations, the supreme authority to ordain peace instead of war throughout the world. Let us carefully preserve those ideals and keep them as a living hope in the hearts of men. The League must be not only a security and defence against war but a recognized fountain of justice which will bring about a new spirit among nations by reducing trade barriers, and by bringing to the needs of all mankind the resources of vast untapped areas in South America, Africa and elsewhere.

In this way the temptations for international dispute would be greatly narrowed, and aggressive nations would find themselves unable to reap the fruits of their aggression. We might go back to the ideas of Briand and Stresemann to form a United States of Europe, if she could be grouped into an economic power unit. Then indeed it would be possible for the nations of Europe to promote the use of the undeveloped parts of the world, bringing in America and such Asiatic countries as were advanced enough to take a hand in this work of making the world a garden for the enjoyment of all races and all nations. This programme would provide an incentive for the pursuits of the victories of peace, and would bring to undeveloped regions the resources of water-power, electricity, and other forms of scientific invention. This would promote both increased consumption and production, instead of the competition of economic nationalism, with its efforts to keep monopolies and to sell to other nations without buying from them.

A necessary alteration in the fundamental constitution of the League would be to allow the inhabitants of a portion of a country—if sufficiently numerous—to have a referendum under League direction. By this they could, through a substantial majority, be

able to leave that State and either remain independent members or join some other country. Of course it would be necessary that the unit to which this would apply should be comparable, in population or area, to those of the smallest States that exist to-day, so as to be not merely a cantonal position.

But, if my main contention has been properly understood, the material motive and incentive to such changes would disappear, and all that would remain would be the desire for cultural and linguistic affinities. If once more the principles of Briand and Stresemann triumph, if the continent of Europe outside Russia becomes a real "united states" with economic union, and if the great world Powers co-operate on a basis of no privilege for the development of backward areas—then indeed nine-tenths of the dangers to civilization would disappear, and what would be left could easily be handled by the central governing body of mankind.

Science has placed at the disposal of man in this generation many forces of destruction. But man, by spiritual progress, can be civilized enough to become the master of such forces and to use them not for destruction but for economic, physical and cultural development. By this term I do not mean religious development alone, but all those things of the spirit and of culture to which insufficient attention is paid when men's thoughts are so insistently turned, as they are to-day, to the menace of war. We have to learn afresh the value of the life of the spirit, and that it can flourish among the peoples only to the extent to which it overcomes by collective action hatred, ill-will and other fruits of selfish ambition in men and nations, building up that single super-State where all races, civilizations and States can feel that they are equal parts of a Holy Whole.

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INDIA

LAND OF NO REGRETS By Lieut.-Colonel A. A. IRVINE, C.I.E. (*Collins*)
12s 6d net.

(Reviewed by PROFESSOR L. F. RUSHBROOK WILLIAMS)

Colonel Andrew Irvine, whose wit has been enjoyed by all those who had the good fortune to serve with him in India, has produced one of the most readable books of reminiscence which I have had the good fortune to encounter. The author has enjoyed a long family connection with India, and not the least interesting of his chapters is based upon an old diary chronicling a journey made in 1814-15 by his great-grandmother in the train of Lord Mordaunt, better known to history as the Marquis of Hastings. True to this family connection, Colonel Irvine has spent a long working life in India, and has been privileged to take part in many stirring events, his own share in which he modestly chronicles. Gifted from his early years with "a pleasant pen," he imparts to us his own enjoyment of his Indian service, while his extraordinarily intimate knowledge of the country makes him a first-class interpreter of the people he has encountered and the events he has witnessed.

Although the characteristic of the book which will impress the casual reader most strongly is the inexhaustible fund of good stories, there is a serious core of reflection which links all the anecdotes together. Colonel Irvine, who during the war and post-war period enjoyed remarkable opportunities of studying at first-hand formidable subversive movements, is convinced that anarchism and communism still remain serious dangers. He has had the courage to recount in some detail the events of 1919, and his incisive criticism of the treatment meted out to General Dyer deserves to be considered with respect even by those who do not share his point of view. Colonel Irvine was a witness in the libel action brought by Sir Michael O'Dwyer against Sir Sankaran Nair, and is at some pains to defend the late Mr. Justice McCardie against the strictures passed upon him in Parliament. But is not Colonel Irvine in error in stating that the then Prime Minister (Mr. Ramsay MacDonald) "was concerned to defend his Minister, Mr. Montagu"? Surely at that later time the Secretary of State for India was Mr. Wedgwood Benn?

Colonel Irvine's gay and good-tempered humour will appeal to many of those who do not always endorse his political convictions. The keynote of the book is, in fact, struck on the first page, when Colonel Irvine explains that Bishop Heber's statement in the well-known hymn that "only man is vile" is to be explained by the fact that when the ship bearing the saintly man was anchored off Ceylon, a gentleman of Sinhalese extraction swam out from the shore and looted the Bishop's cabin! It is tempting to quote at length from Colonel Irvine's collection of anecdotes which are unquestionably fated to be served up in after-dinner speeches for many years to come. There

are magnificent examples of the humour of Tommy Atkins, of which the following may be taken as a fair sample

"The Coronation Durbar at Delhi furnished one gem for my collection His Majesty being present in person, the Viceroy occupied 'a lowlier position than was usual in ceremonial functions 'Ar,' murmured a Tommy, as the procession passed slowly through the lines of troops standing at the present, 'Ar, we used ter know them Ardinges—onst!'"

THE WHEEL OF HEALTH By Dr G T Wrench (C W Daniel Co)
6s. net.

(Reviewed by SIR CUTHBERT SPRAWSON)

Probably each of the large continents could show at the same time examples of races who exhibit the features of physical fitness and health and of races of puny build and subject to many forms of sickness Dr G T Wrench, himself a medical practitioner of long Indian experience and observation, has selected for this purpose India and the people of Hunza He describes their unusual strength and endurance and their freedom from disease and then makes careful enquiry into the cause of their happy state, demonstrating that it is their food that is the predominant, if not the sole, factor in the Hunza's superiority over their neighbours and over the rest of the world in general After consideration of the Hunza food, Dr Wrench goes on to correlate that diet with Sir Robert McCarrison's observations on the relative value of the various diets of the Indian peasantry as shown by giving these articles of food to groups of rats McCarrison found that "poor food in rats is the primary cause of a great portion of disease in them," and, applying similar conclusions to man, Dr Wrench states "The suspicion is that faulty food is the primary cause of such an overwhelming mass of disease that it may prove to be simply the primary cause of disease." The advantage of good housing is admitted, but Dr Wrench aptly cites M'Gonigle's work at Stockton-on-Tees, where the effect of a slum clearance was to increase the morbidity among those who had moved to the better area simply because the higher rents of the houses allowed them less to spend on food The primary importance of nutrition as the basis of health is thus established.

Dr Wrench's whole argument is well stated and philosophically reasoned, and he proceeds then to consider whether any special virtue lies in the Hunza food because of their methods of agriculture He quotes Sir Albert Howard's work on plant diseases, and on the value of prepared natural manure as contrasted with chemical additions to the soil The Chinese and Hunza methods of agriculture are contrasted favourably with those of Europe and North America.

The attempt to apply all the conclusions to modern civilized urban life is admittedly difficult, for we seem to be in a morass of evil methods and incorrect adaptations to our surroundings, and, as Dr Wrench says, "One cannot leap out of a swamp" An attempt is being made, however, in a

few places in England to adopt the methods of agriculture described, and to feed the workers and their families on the products. The experiment will be watched with interest, for, if the argument is correct, the people thereon of the next generation should be all of A1 physique and health. So far as the man of this generation is concerned, condemned to work in a city and dwell in a suburb, the advice in brief is to eat more raw vegetables and fruit, with their skins, and wholemeal bread, and to eat less meat, to drink more milk and not to eat many different foods at one meal. The advice is as sound as the book is interesting, and it will repay many to read it for the benefit both of their own homes and of the community at large.

But one disturbing thought arises. If the Hunzas are so ideally fit and free from disease, why are there not more of them? In 1880 there were 6,000 Hunzas, and now there are only 14,000, whereas the Indian labourer, of whom the Madrassi type is taken by the author to form a physical contrast with the Sikh and the Hunza, multiplies with such rapidity as to cause some apprehension for the future of India.

FOOD-PLANNING FOR FOUR HUNDRED MILLIONS By Radhakamal Mukerjee.
(Macmillan)

(Reviewed by C F STRICKLAND)

Dr Mukerjee is a prolific writer and has in recent years produced a series of books on economic subjects, with particular reference to the pressure of population and the means of subsistence in India and the surrounding countries. Not unnaturally, he often covers the same ground, but does not fail to add new matter in each case. In the present volume he discusses in detail the population and productive resources of India, illustrating the lamentably low standard of living and its tendency further to decline as agricultural holdings are ever more subdivided. His reading has been wide, but the references to books or other authorities to support his statements on contentious questions are fewer than is required in a scientific work. In some cases the figures quoted are estimates for which no adequate data are at present available. Such are the totals of the milk and fish supply (p. 24) of India and the assessment of calories (p. 66) in the diet of a Bengali peasant at various periods of the year. Only an exact exposition of the quantity and quality of the data can give value to these figures. The use of very numerous tables and graphs does not compensate for the lack of references.

While, therefore, his treatment of these complicated problems cannot be called scientific, Dr Mukerjee, having set out an array of correct facts and of suppositions which may be correct, is both constructive and fearless in his proposals with regard to them. The uneconomic attitude of old-fashioned Hindus towards the cow, the marriage of minors, and the neglect of night-soil as manure are roundly condemned, the improvement of crops, of livestock and of popular diets is vigorously urged, and the British

Empire is invited to find space elsewhere for India's superfluous millions. These recommendations point the way to a solution, though the last may not win approval in all quarters, the author does not deal with the effect of Indian immigration on the standard of living in the countries which receive the immigrants. He supports the practice of birth-control.

If Dr Mukerjee's views were generally accepted—and they are shared by a growing number of the younger generation of Indians—India would be happier than she now is. It must, however, be admitted that he usually confines his recommendations to general terms, and though the defects of prevailing diets and practices are made clear, the precise way of achieving a conversion of public opinion is not explained. There is consequently very little *planning* of the food supply in this book. It contains, on the other hand, a large quantity of material and suggestions which should be examined by specialists, and which should thereafter form the basis of just such general studies as this. Dr Mukerjee would be one of the most competent persons to collate the conclusions of specialists for the benefit of statesmen. Meanwhile he is a pioneer, seeking a path in a forest which shows few clear landmarks, and not to be blamed if his steps are guided partly by guess-work, provided that he acknowledges the fact. He has nevertheless written an interesting book, to be read with a measure of caution, but certainly to be read.

BETTER VILLAGES By F L Brayne, C I E, I C S, Commissioner for Rural Reconstruction, Punjab (*Oxford University Press*) 3s net.

(Reviewed by SIR FRANK NOYCE)

As Sir Sikander Hyat Khan says in his Foreword to this little book, Mr Brayne's name is a household word in the rural Punjab. It is not unknown in other parts of India, and it is much to be hoped that it will soon become even better known, for his latest book is one which ought to be at once distributed by Provincial Ministries to all district officers and to all officials who hold any position of responsibility in the "nation-building" departments. Its 300 odd pages are packed full of "wise saws and modern instances," wise saws regarding ways and means of making the Indian village a healthier and more prosperous and, therefore, a more contented and altogether happier place of abode than it is at present and modern instances of their successful application in the Punjab. Mr Brayne does not claim to speak for any Province other than the one he knows so well, and there may be doubts about the practicability of some of the methods he advocates even there, but there can be no doubt whatever that every chapter in the book—and there are nineteen of them—deserves the earnest consideration of all those who are engaged in what he rightly describes as an interesting field of endeavour. It is, of course, far more than that, for there is no field anywhere in the world which offers greater scope for the exercise of wisely directed enthusiasm than the Indian countryside. There is no aspect of village life on which Mr. Brayne does not touch. He has, for

example, something to say, and it need hardly be said that it is well worth saying, about crime and faction in the village, the problem of erosion, occupational sidelines such as the keeping of poultry, goats, bees and silk-worms, the wearing of ornaments by men, women, and especially by children, the destruction of prickly pear and tattooing as a preventive of cattle lifting. He has much to say about the education of women and the consolidation of the fragmented holdings which are the curse of Indian agriculture, for it is perhaps in these two directions, even more than in the co-operative movement generally, though it has had a much less chequered history in the Punjab than in any other Province, that he sees the greatest possibilities of improving the standard of living in the Indian village. The very reasonable price at which the book has been published should do much to secure for it the wide circulation it deserves. A word of praise must be given to the excellent illustrations.

AGRICULTURAL INDEBTEDNESS IN HYDERABAD

AGRICULTURAL INDEBTEDNESS IN H.E.H. THE NIZAM'S DOMINIONS By S M Bharucha, Additional Revenue Secretary (*Hyderabad-Deccan Government Central Press*) 1937

(Reviewed by M C B SAYER)

It is a trite and well-worn saying that one of the main factors in the admittedly low standard of living of the Indian masses is their chronic indebtedness. As one authority has aptly put it, the Indian peasant "is born in debt, goes through life with debts, and dies in debt." This is true alike of Indian India and of British India, and due to a variety of causes, not all of which are economic.

In one Indian State the total indebtedness of the population of 6½ million was estimated, a few years ago, at no less than 35 crores of rupees. Enquires showed, moreover, that the volume of debt, so far from declining, was on the increase, in spite of the gradual spread of the co-operative movement, and that, in a fairly large number of cases, the debt is very nearly equal to, if not greater than, the value of the assets.

It is the fashion, in the East perhaps even more than in the West, to lay almost all the difficulties of the agricultural community at the door of the Government. It is well, therefore, to be reminded that in many villages in Hyderabad, where taxation is exceptionally light, although the volume of indebtedness is conservatively estimated at 64½ crores, the annual interest paid to moneylenders is more than double the land revenue.

The truth, of course, as the author of this instructive report on Agricultural Indebtedness in H.E.H. the Nizam's Dominions clearly shows, is that, except in periods of acute and protracted depression and falling prices, the tax collectors' demands have little, if anything, to do with the question. On the other hand, there is little doubt, as Mr S. M. Bharucha says, that the reason why the problem has assumed such vast proportions in India

during the last fifty to sixty years is the big increase in the value of land "owing to security of life and property and the enforcement of law and order under the Pax Britannica. It has become easy for occupants of even small plots of land to get large loans from their *sowcars* on security of land."

The fact that this is still true today, in spite of the big drop in land values during the past, say, fifteen years, goes to show that rural indebtedness will not disappear with a rise in prices. The consensus of opinion, on the contrary, is that prosperity means larger debts, as the illiterate peasantry get greater credit in prosperous years and do not exercise any self-control in their expenditure. No remedy that can be devised for this very real evil can, therefore, be a real remedy unless it ensures that the land, after being freed from encumbrances, is not likely to be mortgaged again or sold.

All of which, in short, helps us to understand why so many of the various measures proposed to help the agriculturist to rid himself of this besetting sin—restrictions on moneylenders' activities, land mortgage banks, conciliation of debts and consolidation of holdings—are all, to varying extent, palliatives. Like Mr Darling, and the author of the best and most comprehensive study of the problem as applied to the Indian States which has come to our notice, we should despair of a permanent solution had not the co-operative movement shown the way.

At the same time there are two obvious ways, though they may be at best but palliatives, of assisting the uneducated landholders, both of which are given due attention by Mr Bharucha. The first is the prevention, if necessary by legal prohibition, of excessive subdivision of holdings, whereby the land is so split up and distributed as to render economic cultivation impossible. It is true that such measures have been declared as opposed to the principle of Hindu law, yet their advantages are indisputable.

The second remedy is the restriction on the disposal of land by an uneducated cultivator. It is generally admitted that the land on which the village moneylender will make advances is too easy and tempting a security, and that it is not in the State's interest that its ownership should pass from the genuine agriculturist, whether Hindu or Muhammadan, into the hands of the moneylending class, or that the agriculturist should remain simply as the serf of his creditor. It is also agreed that the relations between the moneylenders as a class and the agriculturists were happier in those days when, either through custom or the absence of civil courts, the land could not be taken by decree from the original holders. Doubtless any such restrictions would be occasionally hampering to the good cultivator, and politically unpopular, but in a progressive State like Hyderabad, they would appear to provide an obvious remedy.

As regards rural finance generally, Mr Bharucha is obviously right in holding that the moneylender is, none the less, an indispensable element in Indian rural economy. Neither resources of the Government nor those of the co-operative movement, however much the latter may be expanding, can supply all the money required.

Mr Bharucha and the Hyderabad Government are to be congratulated upon his report, which is undoubtedly a most valuable contribution to a very difficult problem. It is both comprehensive and thorough. It throws new

light on the subject; partly because, perhaps, for the first time, it is treated in a realistic vein, and the approach is both scientific and human.

HYDERABAD STATISTICAL YEAR BOOK

STATISTICAL YEAR BOOK, 1344 FASLI (1935 A.D.) By Mazhar Husain, Director of Statistics. PRICE Rs. 5.

REPORT ON THE ADMINISTRATION OF THE DEPARTMENT OF STATISTICS FOR THE YEAR 1344 FASLI. PRICE Rs. 1. (*Hyderabad Deccan Government Central Press*)

(Reviewed by M C B. SATER.)

It has long been the ambition of the Department of Statistics to produce an annual Statistical Year Book for H E H the Nizam's Dominions on the model of the Statistical Abstract for British India and the similar volumes published by the Governments of Australia, Canada and New Zealand. If, for various reasons, there are some lacunae in the contents of the first issue of the *Hyderabad Statistical Year Book for 1934 Fasli (1935 A.D.)* no blame attaches to the Director of Statistics, who has acquitted himself well of a singularly difficult task.

The value of such a volume to the Government official, business man, student and, in fact, all who have dealings in any way with the premier Indian State, as Mr Mazhar Husain truly observes, cannot be over-estimated. With the expansion of education, trade and industry the demand for up-to-date and, we might add, reliable statistical information is steadily growing. The Hyderabad Statistical Year Book meets a need which not even the most comprehensive series of administration and other reports can satisfy, for it contains within the compass of a single Blue Book many figures which, from their very nature, are seldom found in the usual departmental records, as well as obviates the necessity of having to consult a number of different publications.

It is satisfactory to know that the excellent work of the Department of Statistics, now in its nineteenth year, is appreciated both by the progressive Government and the people whom it serves. Even before the appearance of its *magnum opus*—the Statistical Year Book—the department's many admirable publications, according to the administration report for 1334 Fasli (October 6, 1934, to October 5, 1935), were enjoying a wider publicity, both in India and abroad. Not the least interesting and instructive is its Cotton Manual.

It is not perhaps generally realized how important a place the Dominions occupy on the cotton map of India. On an average Hyderabad accounts for 14 to 15 per cent. of the total area under cotton in India. An increasingly large part is, moreover, devoted to the cultivation of the better varieties, and the collection of all relevant facts and figures in a single volume should make the Cotton Manual an invaluable reference book for the merchant and official alike.

Temperature and rainfall charts, vital and trade statistics, a crop atlas and improved crop forecasts are among the many other publications, the importance of which to agriculturists generally can scarcely be exaggerated.

So multifarious are the activities of the State that a closely packed volume of 800 pages can barely cover them all. The inclusion of comparative figures for the three preceding years greatly enhances the value of the first issue. Small variations from year to year in the progress, for example, in finance and education, go unnoticed, only trained statisticians may see the significance of a change in the second decimal place. But such changes are cumulative, and over a longer period they make themselves apparent even to the least discerning intelligence.

The essential facts are shown not only in figures, but also by means of diagrams which illustrate the results in more graphic form which enable anyone who is, perhaps, averse from studying columns of figures to grasp quickly the salient points.

The conclusions to be drawn are undoubtedly encouraging, and should prove even to the most biased critic of the Indian States the force of Sir Akbar Hydari's contention that "the policy of the Nizam has always aimed at the maintenance of stability—not the stability of inaction or reaction, but the adaptation of policy to changing political conditions, so as to ensure continuous progress in economic as well as other directions."

Some idea of the volume and value of the work done by the Statistical Department since its institution in 1919 can be gained from the list of no less than 371 publications, covering every phase of the State's social and economic activities, for which it is now responsible. The department's achievement becomes the more creditable when the difficulties in the way of the collection of the material and the smallness of the staff are taken into account.

REPORTS OF THE POLICE DEPARTMENT AND ON THE WORKING OF JAILS AND LOCK-UPS IN MYSORE FOR 1936

(Reviewed by SIR AMBERSON MARTEN)

These Departments do not come under the High Court. They are essentially executive Departments of Government, and therefore High Court experience does not qualify one for expert appreciation of their work. But I may draw attention to the comparative statement showing the relations between grave crime and the prices of the staple food grains for the last six years. This is well illustrated by the diagram or graph at the end of the Report. Roughly speaking, grave crime varied with the price of food. Thus the total cases (including murder) were 6,797 in 1935 against 6,120 in 1936, whereas rice, for instance, was 7 80 seers per rupee in 1935 and 8-56 seers in 1936.

This graph reminds one of the graph prepared by the late Sir Basil Scott when Chief Justice of Bombay to show how, over a number of years, the

number of civil suits brought in the Bombay High Court varied with the rateable value of the City of Bombay. Only this was the converse, for prosperity brought more civil litigation. In Mysore a drop in food prices meant less grave crime.

The Inspector-General of Police also refers to the matter of inadequate sentences, already mentioned in his previous Report. He adds "As it appears to me leniency in this matter is an incentive to the commission of further crimes."

Attention is also drawn to the abnormal increase in accidents caused by motor vehicles.

There was also an increase in the number of warnings given to parents against juvenile smoking. Truly the lot of the policeman is a varied one.

The Government review of this Report states that the Police Training School and Finger-Print Bureau continued to do good work; that recruits with good educational qualifications were freely available, and that a test of the literacy of the whole force showed that 70 per cent were capable of maintaining notebooks.

An increase in pay to constables and a redistribution of the police force on a population basis were two important measures sanctioned by Government. The review concludes "Government noted with satisfaction that with a decrease in heinous cases there has also been an increase in detection."

As regards the Jail Report, Government comments on the delay in its submission.

As to the convicts, one may note that over 65 per cent. of them were illiterate, and over 80 per cent. between sixteen and forty years of age.

The Bangalore Central Jail is stated to require rebuilding. But in general the health of prisoners was satisfactory. Provision is made for their education and also for religious and moral instruction. And various industries are carried on in the Central Jail. The question of establishing a Borstal Institution is under consideration by Government.

The Report ends with many pages of elaborate statistics, and there I propose to leave it.

REPORTS ON THE ADMINISTRATION OF CIVIL AND CRIMINAL JUSTICE IN MYSORE FOR THE YEAR 1936-7

(Reviewed by SIR AMBERSON MARTEN)

What do you exactly mean by administrative work? And what work of that description have High Court Judges to do? How often have I been asked that question by barristers in England, and sometimes by advocates in India as well. For the Bar is mainly interested in the lawsuits actually before the Court. Normally it is not concerned with anything else. And yet if the ideal of the true lawyer is to be obtained—viz., sound, speedy and cheap justice—it is vital that somebody in authority should superintend the actual working of the legal machine. The appointments to the subordinate judiciary are as important as a vigilant but sympathetic eye over their

Court work. The large staffs of clerks and the numerous big buildings present their own problems. Improvements in procedure should be never ending, despite the contests between the ideal and the practical. For finance has always to be borne in mind. British Indian High Courts—at any rate in the past—have been given a good deal of latitude in that respect. But that latitude has to be justified, and in India, with its enormous population and corresponding litigation, the annual High Court budget runs into big figures and requires much thought and care by the Chief Justice and judges.

All this is part of the administrative work which in India, as contrasted with England, the High Court Judges have to do. It may sound dull, and yet is really a fascinating subject, and opens up many possibilities for better justice.

Let me illustrate this by the Report on Civil Justice in Mysore for the year 1936-37. Taking the High Court first, a remarkable reduction has been made in the length of time taken to dispose of first appeals—viz., from nearly four years in 1934-5 to less than one and a half years in 1936-7. The High Court comment runs: "At the end of two years under report the only appeals more than two years old were delayed for unavoidable reasons. But the Judges recognize that the position will not be satisfactory while any appeal is pending for more than a year save for some very exceptional reason." A fine standard to set, for many first appeals are of a particularly heavy nature and may each require several days' hearing if sound justice is to be dealt. How one wishes that in old days that ideal could have been obtained in British India, where delays of several years were common in first appeals.

Second appeals in general are of a lighter character, as normally the facts found in the Lower Courts cannot be reviewed. Here the disposals were 403 against 256 in the previous year—another striking figure. And the reason for the large increase in the number of new second appeals instituted is interesting. The Report says: "The High Court has been insisting on district Courts and appellate Courts subordinate to it doing their work more promptly, and the natural result of that has been a temporary increase in second appeals preferred to the High Court as the cases reach that stage."

Turning next to Civil Revision Petitions, their number fell to 481 from 643 in 1934-5. These are apt to depend on the latitude given to Counsel, and so one is not surprised to read, "There had been a tendency in the past, which the Judges have tried to check, to file unjustifiable petitions."

The final paragraph states that there were 1,142 "Periodical Returns and Reports" against 1,074. This makes over three per day, Sundays and holidays included. One cannot help wondering whether they are all worth the time involved. And may we hope that the constantly increasing demands for statistical information made by Government Departments in England will not be too readily copied in India.

The Courts subordinate to the High Court are also of legal interest. As regards the disposal of old suits, I cannot do better than again quote the Report itself: "At the end of the year there were only 622 suits in the Courts of original jurisdiction which were more than a year old. At the

end of the previous year the number was 1,555 - at the end of 1933-4 it was 4,901. Great credit is due to the Judges of trial Courts who by steady and more businesslike work have done so much to bring litigation in the Courts of the State up to date. It may now be said that over 98 per cent. of the suits instituted in the State are disposed of in less than a year, a proportion which according to the information available is not approached in the neighbouring Provinces of British India."

How good that is to read. But I venture to think that it cannot all be done by the Judges themselves. The office staffs are entitled to their share of the credit, for bad or careless work in the office can cause all sorts of legal delays. And, with all respect, I think His Highness' Government must have contributed to that result by their sympathetic consideration of High Court needs. There is a natural limit to the daily amount of judicial work which each Judge can dispose of. And it follows that the judicial staff must be adequate in number to cope with the work, particularly if litigation increases. The Judges may provide the speediest of judicial procedures, but if there are not enough Judges to dispose of the suits ripe for hearing, increasing delays amounting in the aggregate to gross injustice are bound to occur. It is, however, for Government and not for the High Court to have the last word in the number of Judges to be appointed. In Bombay, for instance, it has taken nearly twenty years to get the number which three, if not four, successive Chief Justices have asked for.

Another important point is adequate inspection of Courts. The High Court inspected twenty-six Civil Courts and the District Judges the rest. Inspection, however, necessitates the inspecting High Court Judge being absent from his normal work for a considerable time. He has to take with him an adequate staff, acting appointments have to be made in the High Court to do the work of the absentee, and travelling expenses mount up. So finance is often a serious obstacle to regular inspection. And yet how valuable inspections are. The personal touch thus gained between the High Court and the local Court with its individual needs and its individual Bench and Bar, quite apart from the expert investigations of the office books and records, is well worth the money. And it is good to see that His Highness' State is fully alive to this point.

I can only deal shortly with other matters in this Report. In Insolvency—a difficult subject—there is a substantial increase in the gross realization of insolvents' assets and in the amounts distributed to creditors. The post of the Official Receiver for the Bangalore Division has been made permanent from October, 1936. The importance of miscellaneous appeals being heard promptly is emphasized, as otherwise they often obstruct the work of subordinate Courts.

Although the High Court Library is well maintained, recent editions of textbooks are required for many of the subordinate Courts.

Special steps have been taken to prevent delay in Law Reporting. And in the offices the stock and other registers are maintained properly and verified periodically. The security required to be given by officials is also periodically checked.

Well then may the Government order conclude: "Government note with

satisfaction that the administration of Civil Justice, during the years continued to be efficient, and that it reflects progress in all directions "

There is a separate Report on Criminal Justice. Normally in this branch there is the minimum of delay, because everybody recognizes that the undertrial accused should have the minimum period of suspense. So if needs be, civil justice has to suffer that justice may be done in criminal matters. But even here one reads "That the average duration of cases big and small before Specially Magistrates should still be not far short of two and a half months is not at all creditable. It shows that the Magistrates are still very often dilatory in their methods, and that in spite of the directions of Government, District Magistrates are not strict enough in preventing this." And again "Magistrates who, it must be remembered, do not try the most important criminal cases must realize that to allow cases before them to remain undisposed of for six months without some special justification is a sign of grave incompetence."

In British India delay is often caused by the fact that a subordinate magistrate has revenue or other civil executive work to do besides his criminal work. Nor is the District Magistrate's work by any means confined to judicial duties. So it is often difficult for the High Court to check such delays. Revenue is in general exempt from its jurisdiction and so are its officers. It must also be remembered that criminal work is not confined to fixed centres. Much of it is done on tour, and sometimes in districts where roads hardly exist, but mountains and rivers do. So if work is not finished in one place, the alternatives are an adjournment, or else a tramp by the parties, their witnesses and lawyers, to the next camp. The latter alternative often led to a protest to the High Court in British India.

It is good to see that the High Court is alive to the injustice of the criminal Courts being utilized for civil disputes. For instance, as regards cases for possession of immovable property, they say "The figures show that a very large proportion of these cases were unjustified and that an unreasonably large number of them were instituted by private parties. It is clear that the Magistrates are not nearly so strict as they should be in preventing parties from abusing these preventive provisions of the Code for the purpose of civil disputes."

Special attention is drawn to the excessive number of imprisonments of juvenile offenders. The District Magistrates are warned to watch this carefully. And special detailed reports are to be called for from two districts on this point.

The Report also shows the extensive inspection of the criminal Courts, and that all stock registers have been verified.

The Government order concludes "Government are glad to note that this work of the subordinate Criminal Courts continues to be closely scrutinized by the High Court, and that necessary instructions are being issued from time to time for the speedy disposal of old cases and for an increase in the efficient discharge of work in all the Courts." This is again sympathetic co-operation between Government and the High Court as it should be.

To sum up, these Reports have caused intense pleasure to an old war-horse

And if in certain respects His Highness' State seems to have outstripped the Courts of British India, is it a vain hope that British Indian Courts will respond in friendly rivalry, and none the less so because many of its present Governments have in their Cabinets eminent Indian lawyers who are fully alive to the possibilities for improvement in the British Indian Courts?

FAR EAST

TRIALS IN BURMA. By Maurice Collis. (*Faber and Faber*) 8s 6d net.

(Reviewed by PROFESSOR L. F. RUSHBROOK WILLIAMS)

The title which Mr Collis has given to his book embraces three distinct themes. The first is a subjective account of personal tribulations, for the most part arising out of the second, which is a detailed record of the feelings of a magistrate called upon to decide three cases which aroused much local feeling, the third is a description of the critical period through which Burma herself was passing in 1928-30.

It is a sound general rule that those who have occupied official positions and discharged official responsibilities should refrain, when these responsibilities have ceased, to comment freely upon the conduct of colleagues still living. Nevertheless, like all sound general rules, it permits of certain exceptions, and I am inclined to believe that Mr Collis's book, from its sheer interest, should be allowed to qualify as one of them. The author has certainly permitted himself the most extraordinary latitude in his comments upon governmental policies and personalities, and it is difficult to imagine such a book being permitted to appear in any country where a *droit administratif* exists. As it is, although it will offend purists who take a rigid view of the unwritten laws binding Government officials to perpetual discretion, it seems to me to have been well worth publishing.

Mr. Collis has described with devastating frankness his own psychological reactions to a dilemma in which officials not infrequently find themselves, namely, whether justice or expediency is to prevail. This dilemma occurs more often in Britain's Eastern dependencies than in Britain itself, for the simple reason that the distinction between the Executive and the Judicial Services is, except in the higher ranks, less clearly marked in the former than in the latter. Mr Collis was responsible for the discharge of judicial functions. But he was also a member of an Executive Service, dependent for his prospects upon the view which his official superiors formed of his conduct. Now it so happened that in three particular cases—two of them involving Europeans—Mr Collis found himself obliged to walk as delicately as Agag. For while he quite rightly declined to disobey the dictates of his own conscience, he found himself equally unable to ignore the fact that his decisions might produce repercussions of the utmost political importance. I think it will be agreed by the majority of readers that Mr Collis discharged

his responsibilities both adequately and tactfully, but in admitting us as he does to the inner workings of his spirit, he seems to display a temperament somewhat over-diffident for the satisfactory operation of the "judicial mind." He certainly does not lack courage, but having made up his mind as to where his duty lay, he was unnecessarily racked by subsequent doubts and hesitations.

Those who are unfamiliar with the working of the public services in the East may be surprised at the attitude displayed by executive officials. But from the standpoint of the detached observer, it must be freely admitted that there is no exaggeration in Mr Collis's picture. It has for long been a cardinal maxim with those to whom power and responsibility have been committed, both in India and Burma, that the upholding of what is conveniently termed "British prestige" ranks high upon the list of their duties. For this reason, when a European comes into conflict with the law, the matter is not always regarded from the purely judicial angle alone. Such an attitude may lead itself to grave errors of judgment, it has certainly done so from time to time in the past. To take a simple example from Mr Collis's own experience: here we have a young British officer who drove a motor-car in such a fashion as to cause grave injury to innocent people who were obeying a properly worked system of traffic control. The penalty prescribed by the law—a penalty actually allotted by Mr Collis—would have deprived this young officer of his commission. Had the offender not been a European, the law would have taken its course. As it was, the penalty was modified. The young officer was saved from the blasting of his entire career from the consequences of a moment's carelessness. Was such interference with the ordinary course of justice proper or improper? Such a problem as this raises very important questions which go far beyond the matter immediately at issue. But on one point I personally am perfectly clear, and I imagine Mr Collis agrees with me. I hold it is a grave psychological error to imagine that "British prestige" is enhanced in the eyes of the inhabitants of our Eastern dependencies by mitigating the rigours of the law in favour of Europeans. Indeed, I believe the exact contrary to be the case. I believe that the prestige of British rule is directly promoted by an inflexible administration of the law, regardless of personal consequences.

It is not alone with problems of this description that Mr Collis's book is concerned. He takes us into the very heart of Burma during an extremely uneasy period, and he reveals with uncommon directness the inadequacy of the steps which the Government of Burma considered sufficient to placate Burmese Nationalist aspirations. The curiously accidental manner in which Burma received a Constitution broadly satisfactory to herself is disquieting, but this story provides one additional illustration of the supremely important part played at moments of crisis by such detached and influential students of Imperial affairs as Mr Lionel Curtis.

Many readers will put down the book with a feeling of regret that Mr Collis is no longer serving in the country which he loves and understands so well. So intimate a revelation of his own personality must no doubt have been distasteful. But the courageous manner in which he has faced his task, through his perception of the profound public significance of his own personal

experience, must commend itself to those who admire self-sacrificing public spirit.

THE FINANCIAL AND ECONOMIC ANNUAL OF JAPAN, 1937 (Tokyo Government Printing Office) Price 2 yen (2s 4d)

(Reviewed by N. SKENE SMITH)

This volume of over 300 well-printed pages is good value for money. Nevertheless, like so many statistical abstracts, it contains masses of detail which are likely to be of interest to only a few readers and which tend to smother the essential factors lying behind the economic development of the country. Also the compilers, in their zeal to be complete and beyond factual criticism, give many condensed totals which tell us little and are sometimes positively misleading. For example, in the table on page 3, which shows that some 39,000 foreigners live in Japan, no mention is made of the fact that most of these are Chinese, Russians and other Eastern peoples, whereas the number of Europeans and Americans is extremely small. Yet this is one of the main reasons for the ignorance in the Western world of Japanese problems. Again, in a book of this kind, much more important than a division of rice-harvests into glutinous, non-glutinous, irrigated and upland would be a table showing the production, imports and exports of rice. Four pages of small print are devoted to the Invisible Trade of Japan and her International Balance of Payments, but no general statement is made as to the extent to which the figures can be used to interpret the actual movements of goods, services, securities and gold, nor is any clue offered to the depreciation of the yen exchange from 1931-33 and its subsequent stabilization.

Some of these fundamental facts and trends may be discovered from the *Japan Year Book* (published by the Foreign Affairs Association of Japan), the reports of the Mitsubishi Economic Research Bureau and the English edition of the *Oriental Economist*, but there is no book which will give the layman a short analysis of Japan's economic position. One day, perhaps, Western countries may begin to supply the need with a reformed series of consular reports based on information supplied by men on the spot with a knowledge of the language, but set out in a form established by men at home, in touch with the requirements of traders and trained to arrange statistics with a view to their usefulness rather than their completeness and mathematical exactness.

The volume shows us a population of 70 millions, increasing at the rate of about a million a year, with eight cities containing over a quarter of a million inhabitants and four with over a million. Tokyo is the third city in the world. The occupations of these people are not stated, nor is it pointed out that nearly a half are farmers. The statistics given for "factories" leave out of account at least half of Japan's manufacturing labour force.

The figures of national revenue and expenditure are fairly complete and we can follow the steady rise in expenditure and the national debt since 1931. Thirty-four pages of letterpress are devoted to the taxation system and about a dozen to the national debt. There is also an account of the

industrial monopolies and railways, administered by the Government, and some figures are given of loans issued by local governments, whose revenue and expenditure are summarized in a convenient form.

Part II. has figures of agriculture, mining, manufacturing, company finance and insurance. It consists of only forty pages and is not as complete as other sources. Agriculture, though still the backbone of the country supplying the food needs of the whole country, and raw silk, the chief export commodity based on domestic materials, is given only half a dozen pages. Post Office Life Assurance receives four pages.

Part III, on Foreign Trade, gives the totals of imports and exports since 1902, and figures of leading commodities and countries from 1930-36 (Tables 61 and 62). All tables are of values, and not quantities, although quantity figures for most items are collected by Government statisticians. Part IV supplies useful details concerning bank deposits, the functions of the Special Banks, and foreign exchange control. The tables of price indices are not so good as those given in the Mitsubishi Monthly Circular.

After a few figures on railways and shipping, the last fifty pages summarize progress in Korea and Formosa. The emergence of Japan's colonies from the world depression is remarkable, and it would be instructive to have figures going back for some decades, showing the economic effects of Japanese control. The volume enables us to assess neither the achievements nor the failures of Japan's economy; yet this is one of the most important tasks facing the world today.

THE IMPORTANCE OF LIVING By Lin Yutang (*William Heinemann*)
15s. net.

(Reviewed by EDWIN HAWARD)

There is a whimsical, rollicking humanity in Lin Yutang. Having caught the world's ear with a classic satire on his country and its people, he allows himself the relaxation of extending his observation from China to Peru. His experience of thought and life is here set down without pretension to the discovery of eternal truths. He even disclaims objectivity which nearly every writer today puts at once in his button-hole, sniffs at occasionally and promptly proceeds to ignore. He lays no bouquet at the feet of high authority. His philosophy has humble "documents." For good breeding he goes to his family *amah* (nurse); for ethical inspiration a hard-swearing Soochow boatwoman, a Shanghai tram-conductor, a cook's wife, a deck steward, a lion cub, a New York squirrel help him to formulate his unconventional philosophy.

So his net is cast wide. The importance of living is viewed in the approach to life, the cultural heritage of nations, the "monkey epic," human individualism, happiness, leisure or idleness, until the final art of thinking brings the mind to common-sense and reason. Instruction is mingled with a generous measure of entertainment, jest and fancy. What should a reviewer do with such a book? Why, he should firmly tell the reader to

buy it. Obedience would give the best opportunity of justifying itself. Yet it may be permissible for the reviewer to act as a trailer is supposed to act in a cinema—by selecting at random certain passages, the enjoyment of which will inevitably compel the patient to call for the whole bottle.

Interspersed in the essays are some delightful translations. Here is an extract from Chiang Tan's "Reminiscences under the Lamp Light" Chiang Tan is writing of his wife

Chiufu loves to play chess but is not very good at it. Every night she would force me to play "the conversation of fingers" with her sometimes till daybreak. I playfully quoted the line of Chu Chuchua "At tossing coins and matching grass-blades you have both lost. I ask you with what are you going to pay me tonight?" "Are you so sure I cannot win?" she said, evading the question "I will bet you this jade tiger." We then played and when twenty or thirty stones had been laid, and she was getting into a worse situation, she let the cat upon the chess-board to upset the game. "Are you regarding yourself as Yang Kueifei (who played the same trick upon the Emperor Tang Ming-huang)?" I asked. She kept quiet but the light of silver candles shone upon her peach-coloured cheeks. After that we did not play any more.

Then in "Six Chapters of a Floating Life," an obscure Chinese painter, Shen Sanpo, tells of his beautiful wife Yun, and how, under the moon, they started to compose a poem together.

By this time Yun was buried amidst tears and laughter and choking on my breast, whilst I felt the fragrance of the jasmine in her hair assail my nostrils. I patted her on the shoulder and said jokingly "I thought that the jasmine was used for decoration in women's hair because it was round like a pearl, I did not know that it is because its fragrance is so much finer when it is mixed with the smell of women's hair and powder. When it smells like that, even the citron cannot remotely compare with it." Then Yun stopped laughing and said "The citron is the gentleman among the different fragrant plants because its fragrance is so slight that you can hardly detect it, on the other hand, the jasmine is a common fellow because it borrows its fragrance partly from others. Therefore, the fragrance of the jasmine is like that of a smiling sycophant." "Why then," I said, "do you keep away from the gentleman and associate with the common fellow?" And Yun replied "I am amused by the gentleman that loves the common fellow."

For the epigrams of Chang Chao let these be chosen

Passion holds up the bottom of the universe and genius paints its roof.

Better be insulted by common people than be despised by gentlemen, better be flunked by an official examiner than be unknown to a famous scholar.

When literary men talk about military affairs, it is mostly military science in the studio (literally "discussing soldiers on paper"), and when military generals discuss literature it is mostly rumour picked up on hearsay.

Here, also from Chang Chao, there is a remarkable parallel to Shakespeare

A man who knows how to read finds everything becomes a book wherever he goes hills and waters are also books, and so are chess and wine, and so are the moon and flowers.

Lan Yutang's own philosophy finds nothing that is human alien to its ken. He laughs at foreign clothes, which he compares with Chinese garments to the latter's advantage. Foreign dress is all right for young and beautiful women or for men whose waistline can defy definition.

While the graceful woman in foreign evening dress shines and charms in a way not even remotely dreamed of by the Oriental costume-makers, the average over-fed, over-slept lady of forty who finds herself in the golden horseshoe at an *opera première* is also one of the eyesores invented by the West. The Chinese dress is kinder to them. Like death it levels the great and the small, the beautiful and the ugly. The Chinese dress is therefore more democratic.

He considers the art of lying in bed is shamefully neglected. The value of solitude and contemplation is no less ignored. He is as enthusiastic as Barrie over the fragrance of tobacco-smoking, but confesses that he is no drinker only because he has a poor capacity. So, artlessly, he draws his own portrait—a genial lover of ease and, above all, of his fellow men.

FICTION

KANTHAPURA By Raja Rao (*Allen and Unwin*) 7s 6d net.

(Reviewed by DOROTHY FOOKS)

This is a remarkable book, written entirely from the Congress point of view. To read it fairly one should put aside any personal resentment which might be felt by many readers at its frankly anti-British tendency. It tells of the rise of the spirit of revolution in a South Indian village. The book opens on a subdued note which gradually quickens as the seeds of discontent, inconspicuous at first, are watered and ripened. The narrator of the story is a woman, and through her one gets a vivid picture of the lives and characters of those around her, especially the young Brahmin visionary, Moorthy, who becomes inspired with the teachings of Gandhi. He starts a Congress group in Kanthapura, and preaches civil disobedience and contact with the Untouchables. The force of his personality and idealism gets him many followers. Inevitably the attention of the authorities is drawn to the village, and the story ends in a violent conflict which is painful to read. This is a piece of excellent descriptive writing. Though the style of the book is often confused, there are numerous passages of extreme beauty.

THE DREAM PREVAILS By Maud Diver (John Murray) 7s. 6d. net.

(Reviewed by DOROTHY FOOKS.)

This book raises many problems, and carries a message. Its story is of India, a young social India blossoming out of the old.

The authoress reintroduces us to the Desmond family, this time the third generation, and worthy successors to their famous forbears. We see them in that corner of North-West India which they had served so long. But with new generations come new problems, one being that of mixed marriages. A young commissioned Indian officer, Sher Afzul Khan, meets Christal Adair who is visiting India. They fall in love, but ultimately Christal realizes that marriage means tragedy for both, and they agree to part.

Another aspect of the mixed marriage is that of Sir Roy Sinclair, the dominant character of the book. The son of an Englishman by his marriage to a Rajput princess, and having in his veins the blood of East and West, he is in deep sympathy with the complex difficulties of both races. He comes under the influence of a "guru" in Kashmir, studies Vedic philosophy for a while, and then retires to the mountains to seek solitude and understanding. For six months he is away from the world of men, and when he eventually returns he is fired with the belief that the good of India must be seen with understanding hearts and minds as a common problem for British, Hindu and Moslem alike. Only by devotion to the aristocratic ideal implicit in the hearts of both races can success and harmony be achieved.

PERIODICAL

LA REVUE FRANÇAISE D'OUTRE-MER (Paris *Union Coloniale*)

The July number of this review fully maintains the standard of previous issues. M. Jean Guérard writes on recent events in Pondichery. There is a concise and vivid study of recent development in the Indian tea industry, recording the interest in consumption, particularly in India and Iran. In the Empire Notes mention is made of the new regulations for scholars in the Colonial School in Paris. It is laid down that after the first two years of study every candidate must spend twelve months in one of the colonies before entering upon his third and last year at the school. Another innovation of M. Mandel, the Minister of the Colonies, is the allocation of 30 scholarships distributed among leading educational establishments. The recipients are sent on a cruise to one of the colonies during the summer vacation. Lastly, the measures are described by which the penal settlement, popularly known as the Devil's Island, is being dissolved.

NEAR AND MIDDLE EAST

THE GREEKS IN BACTRIA AND INDIA By W W Tarn, Litt D, F B A, LL.D
(Cambridge University Press) 30s net.

(Reviewed by H G RAWLINSON)

The object of this monumental work is to give an account of the interaction between the cultures of Greece, Iran and India in the Middle East.

The story of the Greeks in India has hitherto been treated as part of the history of India alone. This, Dr Tarn considers, is unfortunate. In the history of India the episode of Greek rule has little significance. It really belongs to the history of Hellenism, and that is where its meaning resides. The Greek Empire of Bactria and India was a Hellenistic one, with many of the usual characteristics of such states, and its history was a branch of Seleucid history, just as the Euthydemid dynasty was on the distaff side a branch of the Seleucid line. As such it must be treated, and Dr Tarn hopes that this book may do something towards bringing it back into the sphere to which it belongs. The period covered is a short but critical one, it extends from 206 B.C., the year when Antiochus III quitted the East, to the occupation of Alexandria by Augustus in 30 B.C., which coincides with the overthrow of the last Greek Kingdom in India. Dr Tarn endeavours in particular to reconstruct the reigns of the three monarchs—Euthydemus, Demetrius and Menander. As he points out, the material is not so scrappy as it seems, much of the lost originals is preserved in Strabo, Justin, Plutarch, Ptolemy, Pliny, and there is an almost unique wealth of coins. On the Indian side are the inscriptions, some coins, and references in Sanskrit literature, particularly in works like the *Yuga Purana*. Allusions to the Greeks in Sanskrit and Prakrit are very numerous and throw much light on the subject.

It is impossible even to summarize in the course of a brief review the narrative which fills the four hundred closely packed pages of Dr Tarn's work. Bactria, with its Iranian barons, its Greek settlers and its serf peasantry, was the great outpost of Hellenism, which held off nomadism with one hand, whilst annexing most of Northern India with the other. Euthydemus, the greatest of the Bactrian rulers, accomplished what Alexander had planned, the creation of a Græco-Iranian state on a basis of equal partnership. Demetrius took the ideas of Alexander the Great to India, and, helped by his army of Iranian cavalry with a spearhead of Macedonian infantry, he invaded the Punjab. Demetrius was the greatest of the Indo-Greek rulers, there is a faint echo of his fame as late as Chaucer. He made Gandhara a second Hellas, and built a new capital at Taxila. Sailing down the Indus in the track of Alexander, he added Sind and Kathiawar to his empire. Dr Tarn thinks that Demetrius took the side of the Buddhists in their revolt against the attempt of the Sunga king, Pushyamitra, to restore Brahminism, and for this he was looked upon as the "King of Justice" of their traditions. The more conservative Greeks disliked these Indianizing tendencies, and, as a result, Antiochus IV sent his cousin

Eucratides to overthrow Demetrius. His general, Menander, who married his daughter Agathocleia and succeeded to his Indian dominions, carried on his policy, though Dr Tarn has his doubts about the popular legend that Menander became a Buddhist convert, and looks upon the famous *Questions of Milinda* as a historical romance. Had fortune allowed Demetrius to consolidate his Bactrian and Indian possessions, the Greeks might even have been able to resist the Kushan invasions, but fate ruled otherwise, and the story is that of one of the last and greatest adventures of the Hellenic race, which ended in a glorious failure.

Dr Tarn analyses with his usual penetration the influence of Greek rule on India. He shows that Greek was widely spoken in the Northern Punjab, and there were Indians acquainted with Greek literature just as later they studied Persian and English. Conversely, there were Greeks who studied at Taxila University, and read the Hindu and Buddhist classics. Many of them were converts to Hinduism and Buddhism, and their ultimate disappearance was due to the fact, not that they became Eurasians, but that they became Indians. The supreme gift of Greece to India was the Buddha figure. Dr Tarn is convinced that the idea of representing the Buddha in human form was born of Indian piety using Yavana technique, and was not indigenous in origin. It dates from the Indo-Bactrian period and not from Kushan times. The earliest extant representation of a Buddha statue is on a coin of Maues (80-58 B.C.), and is thus at least a century earlier than the Indian Buddhas of Mathura. The Indian artists of Mathura discarded the old rule of only representing the Buddha by symbols because it had already been broken for generations in Gandhara. One of the reasons why Buddha became a god was that a nameless Greek artist, who had to earn his living, took it into his head to portray him as one. This is just what the primitive Buddhists felt might happen, and tried to guard against.

Dr Tarn's great work is probably the last word on the subject until the day comes when the archaeologists have a free hand and enough money to carry out really adequate excavations at Balkh and other sites. It represents the mature result of forty years' unremitting research. Our only criticism is the lack of illustrations. There is only one coin plate, and surely the ordinary reader might have been favoured with examples such as the fine portrait bust of Euthydemus in the Torlonia Museum at Rome, the ivory pendant from Taxila with the philosopher's head or the fragment of the Indian vase with a scene from the *Antigone*, even though other admirable examples are already given in Vol. I of the Cambridge History of India.

*

PLANT HUNTER'S PARADISE By F. Kingdon Ward. With full-page illustrations and 2 maps. (*Jonathan Cape*) 12s. 6d. net.

Mr Kingdon Ward has undertaken several expeditions to Central Asia of which records have been issued in book form to the delight of appreciative readers.

In the new volume the author can claim the same knowledge of his sub-

ject as in previous works, and the same skill in describing his journey of 1930-31. Two excellent sketch-maps show the author's and Lord Cranbrook's route covering the jungle between Tibet and Northern Burma. The object was to discover the plants as well as the animals of that region. The results in these respects are carefully noted in appendices, they consisted of mammals, birds, reptiles, and insects, besides plants which have been identified by experts.

Those objects enumerated occur again within the fascinating story of the author's adventurous journey, which is intended for the layman, no less than for the naturalist. The illustrations are of exceptional quality, they are large and clear, showing landscapes with displays of flowers, shrubs or trees, and in addition a few types of men and women.

MAXIMS OF ALI. Translated from the Arabic by J. A. Chapman. (Oxford University Press) 2s 6d net.

The *Maxims of Ali*, son-in-law of the Prophet and his fourth successor, were translated for the first time in 1717 by Ockley, and now Mr J. A. Chapman has issued on behalf of Sayyid Abu Muhammad an entirely new rendering in a charming form. The maxims, or sentences, are of that high type which ensures them a prominent place in Arabic literature and will remain of permanent value. The maxims are arranged according to subjects and the words are elegantly chosen, like passages from the Bible, by Mr Chapman, who is known for his volumes of poetry on Indian subjects. Full acknowledgment is due to Sayyid Abu Muhammad for bringing the work back to light.

CORRESPONDENCE

"INDIAN ECONOMISTS IN CONFERENCE"

In his article on "Indian Economists in Conference," published in the April number of *THE ASIATIC REVIEW*, Mr Edwin Haward has made a few remarks about my Presidential Address at the last Conference of Indian Economists. I must at once say that he has missed the main point of my address and has read into it certain opinions which I do not hold. The sentence on which he has put the worst misconstruction is this: "The most distressing feature of India's economic position is that in spite of the large increase in foreign trade and industrial production in the last seventy years, there has not been any appreciable improvement in the standard of living of the masses" (pp 1-3). It is surprising to find that Mr Haward takes this to mean that "stagnation had marked the economic history of India over a period of seventy years" (*THE ASIATIC REVIEW*, p 363). The true meaning of my statement is elaborated in the body of my address. It is, in short, that while trade and industry flourished in India in modern times, the benefits thereof have been reaped far more by the urban classes than by the rural masses. India's staples fetched high prices in world markets, and this put money into the pockets of the merchant and the moneylender, but the actual producers have remained poor. This, however, was not due to anything done by the Government, but chiefly due to the vicious economic and social system that has long prevailed in this country. I have stated this elaborately, because there has been an inclination on the part of politicians to attribute India's ills to foreign rule. There has also been a growing belief among certain persons that over-population was the cause. In recent times, many have also considered the high exchange ratio as the chief cause of India's ills. The untenability of all these allegations has been made clear in my address.

No one denies that famine has become rare since 1900. It is also true that Lord Curzon was a pioneer in agricultural organization. Everyone admits that since 1920 much progress has been made in rural betterment. In 1935, Sir James Grigg initiated a new policy by making liberal grants to the provinces for rural amelioration, and with the arrival of Lord Linlithgow as Viceroy, a thorough re-orientation of policy has taken place. The new autonomous Provincial Governments are following this up. But all this does not imply that the conditions of the masses have already improved substantially, nor can this take place without an improvement in India's economic system, and this calls for the pursuit of an active policy by the Government. I have therefore made an earnest appeal for such an active policy, especially by the provinces, and have tried to enunciate the principles on which it should be based. And this appeal has not been in vain.

P J THOMAS

University of Madras,

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